



I hereby certify that the correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to the Commissioner of Patents and Trademarks, Washington, D.C. 20231 on 8-17-01

[Signature]
Amy J. Martin
Date of Signature 8-17-01

COPY

COPY OF PAPERS
ORIGINALLY FILED

PATENT

#4

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Mount et al.

Serial No.: 09/835,976

Group Art Unit: Not Assigned

Filed: April 16, 2001

Docket No.: 1242/26/2

Confirmation No.: Not Assigned

For: PURIFIED AND ISOLATED POTASSIUM-CHLORIDE COTRANSPORTER
NUCLEIC ACIDS AND POLYPEPTIDES AND THERAPEUTIC AND
SCREENING METHODS USING SAME

* * * * *

Commissioner for Patents
Washington, D. C. 20231
Attention: Official Draftsman

TRANSMITTAL OF FORMAL DRAWINGS

Dear Sir:

Please find enclosed a new set of formal drawings (42 sheets) for filing in the
above-identified U.S. Patent Application.

Respectfully submitted,

JENKINS & WILSON, P.A.

Date: August 17, 2001

By:

Arles A. Taylor, Jr.
Arles A. Taylor, Jr.
Registration No. 39,395

Suite 1400 University Tower
3100 Tower Boulevard
Durham, North Carolina 27707
Telephone: (919) 493-8000
Facsimile: (919) 419-0383

Customer No. Bar Code Label:



25297

PATENT TRADEMARK OFFICE

1242/26/2 AAT/ajm

COPY

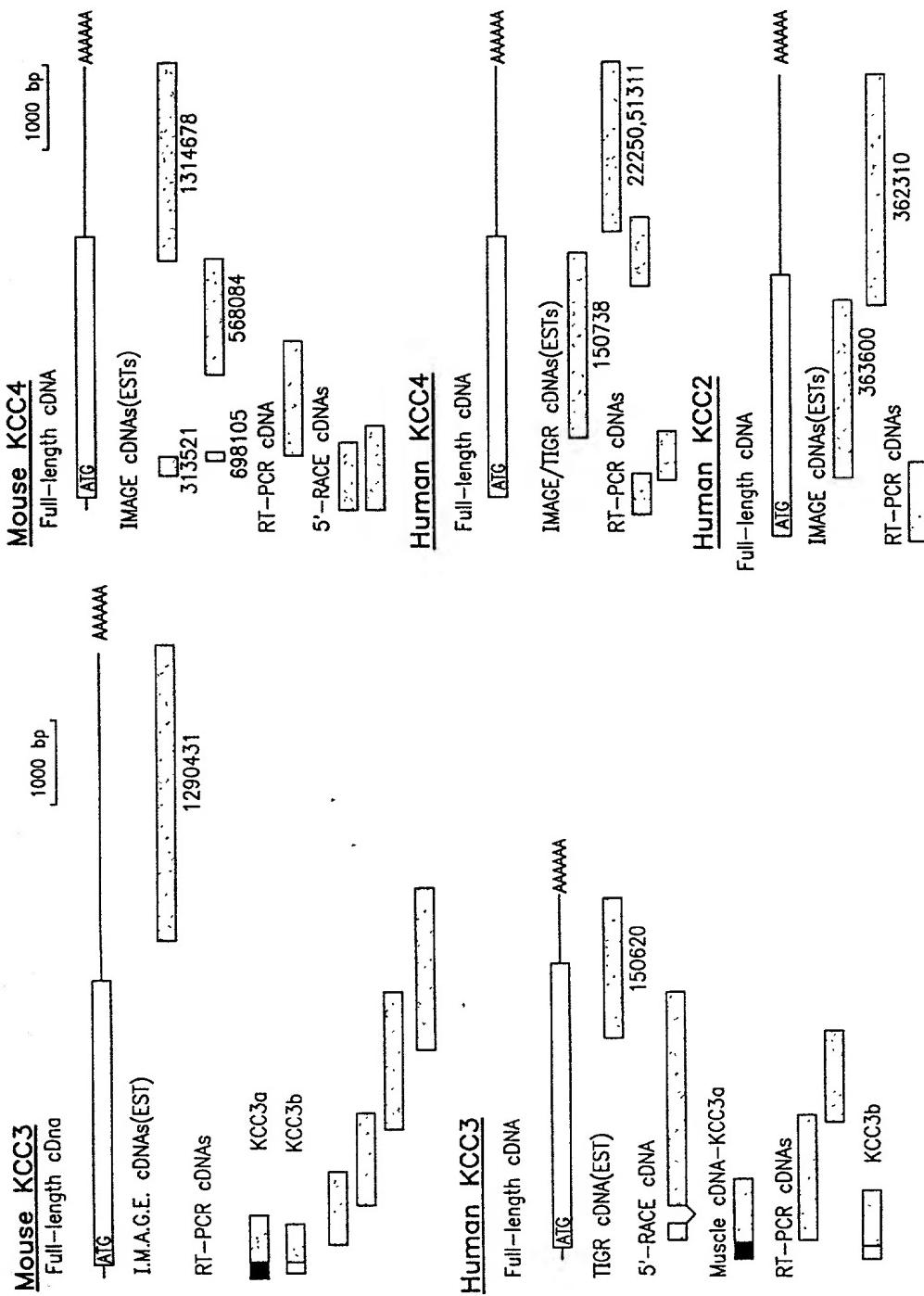


FIG. 1

COPY

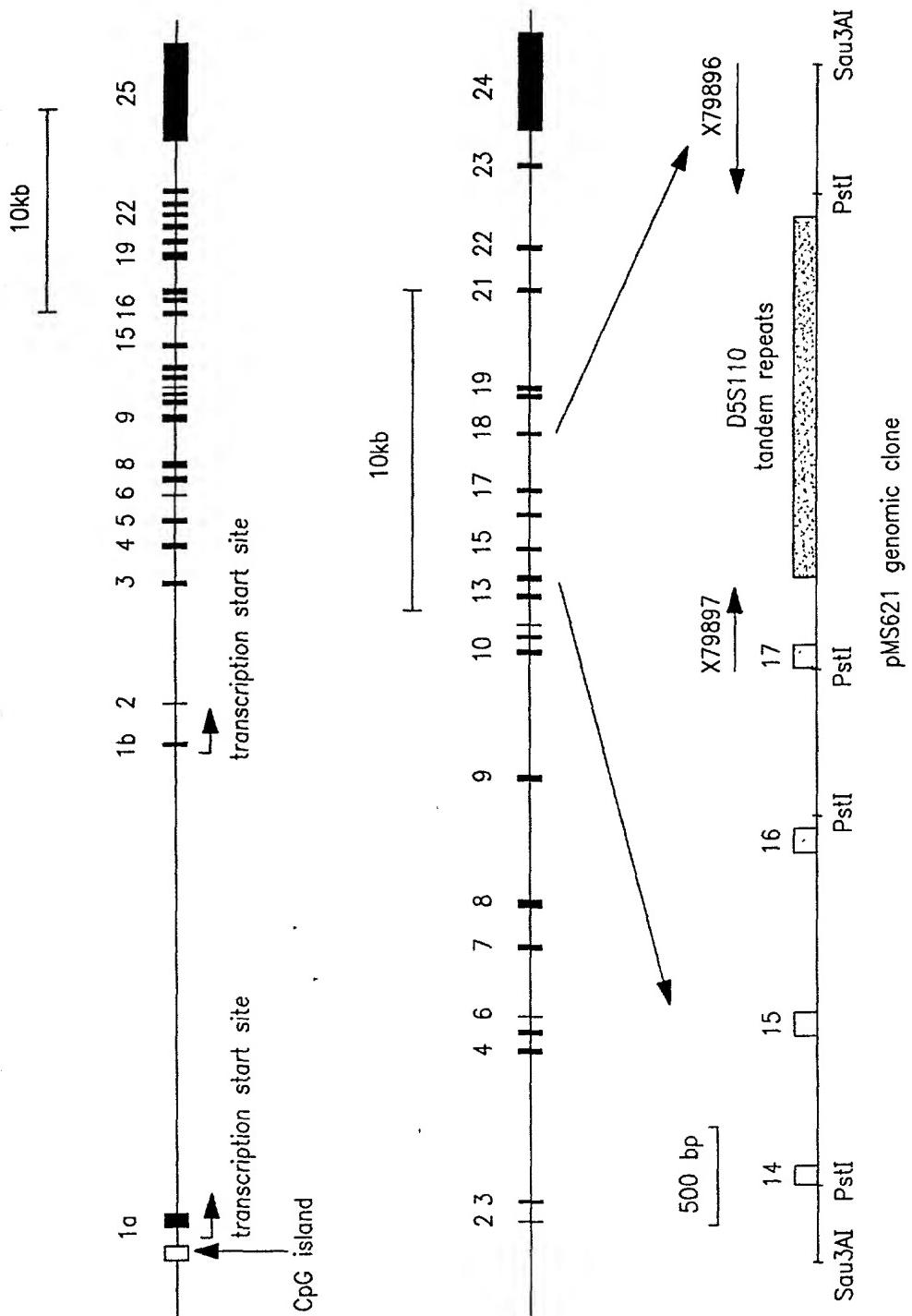


FIG. 2A

FIG. 2B

Title: Purified and Isolated Potassium-Chloride Channel
Nucleic Acids and Polypeptides and Therapeutic and
Screening Methods Using Same
Applicant(s): Mount et al.
Serial No.: 09/835,976

COPY

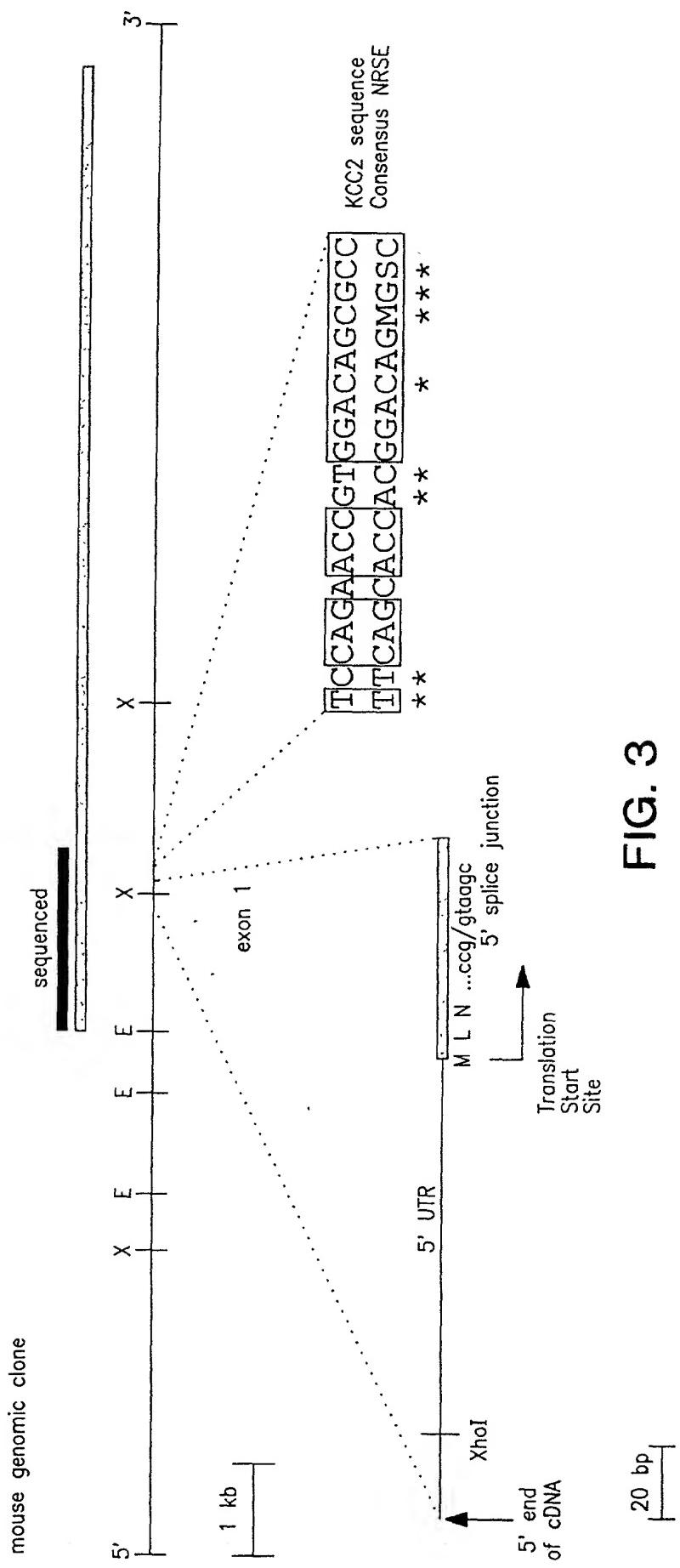


FIG. 3

COPY

SEARCHED "SEARCHED"

probe dilution	1:1	1:4	1:20	1:100
nuclear proteins	- + - + - + - +			

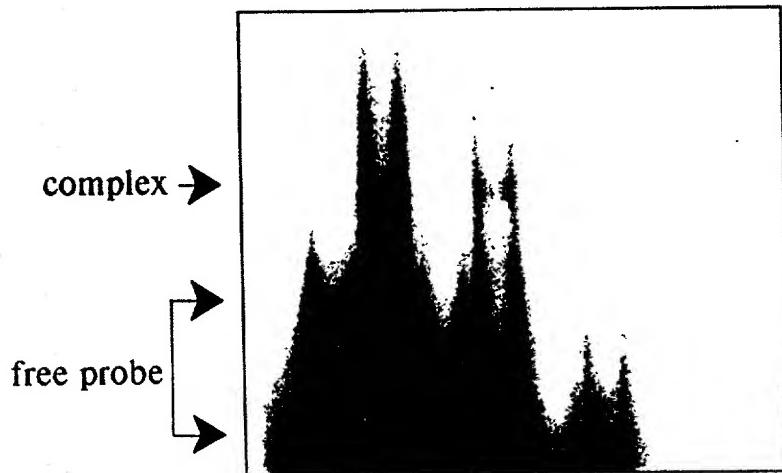


FIG. 4A

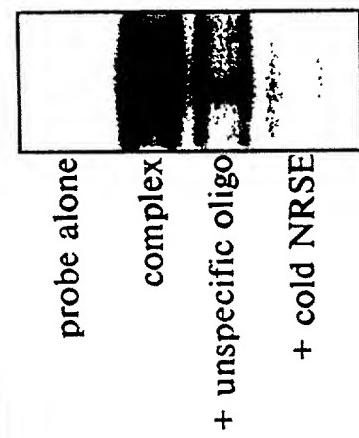


FIG. 4B

Title: Purified and Isolated Potassium-Chloride Cotransporter
Nucleic Acids and Polypeptides and Therapeutic and
Screening Methods Using Same
Applicant(s): Mount et al.
Serial No.: 09/835,976

COPY

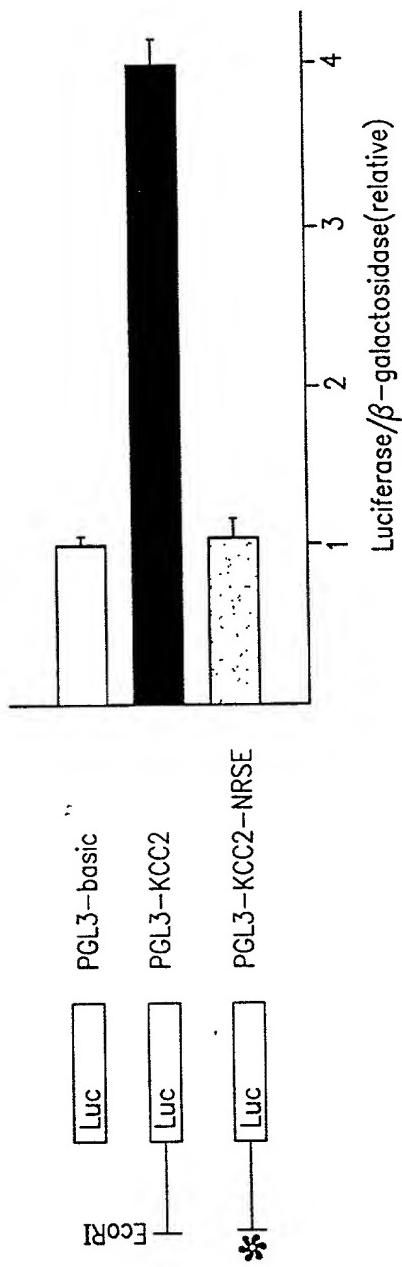


FIG. 5

Nucleic Acids and Polypeptides and Therapeutic and
Screening Methods Using Same

Applicant(s): Mount et al.
Serial No.: 09/835,976

COPY

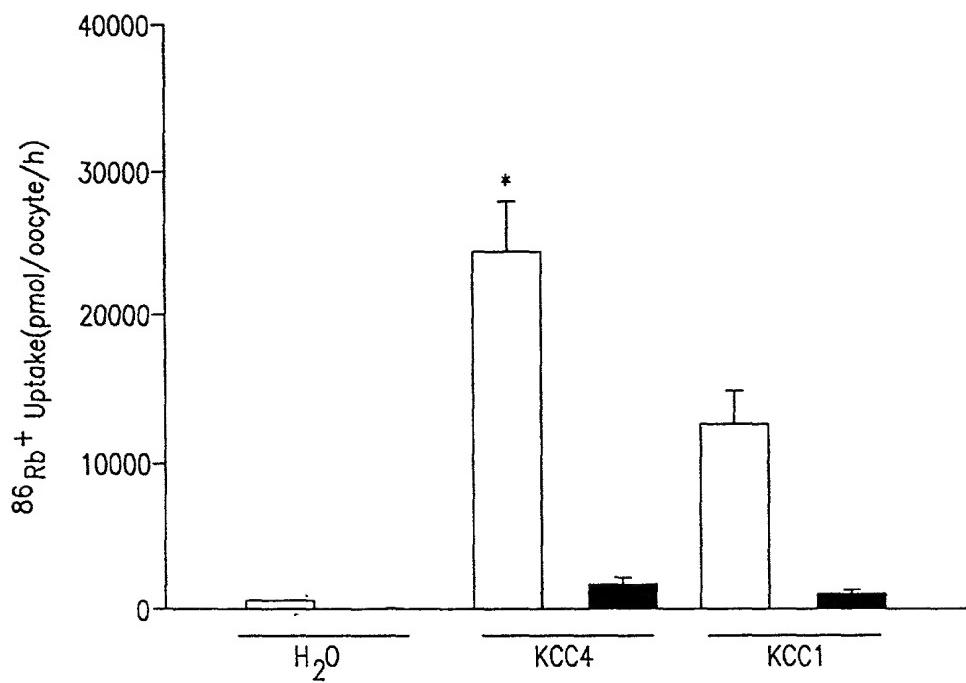


FIG. 6

COPY

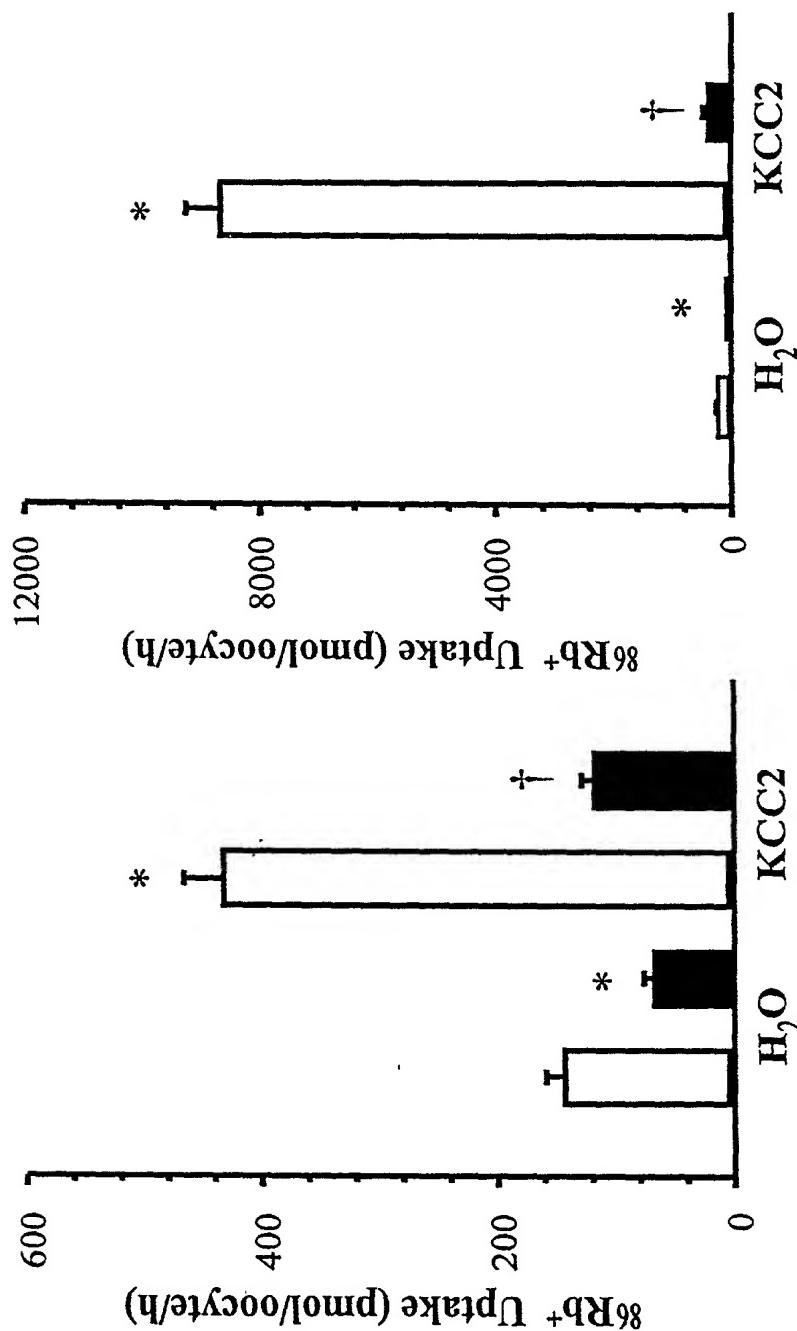


FIG. 7A

FIG. 7B

COPY

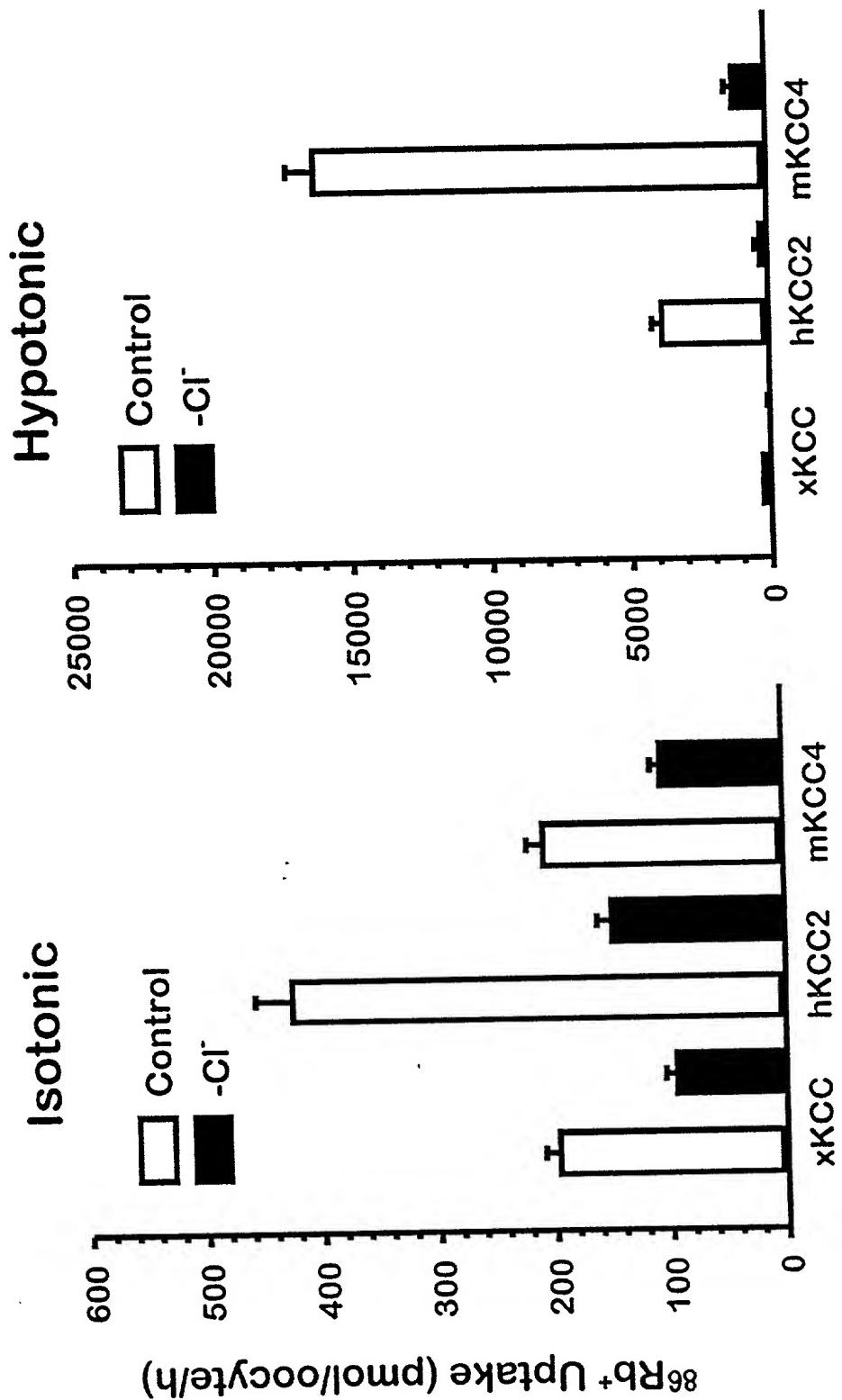


FIG. 8

COPY

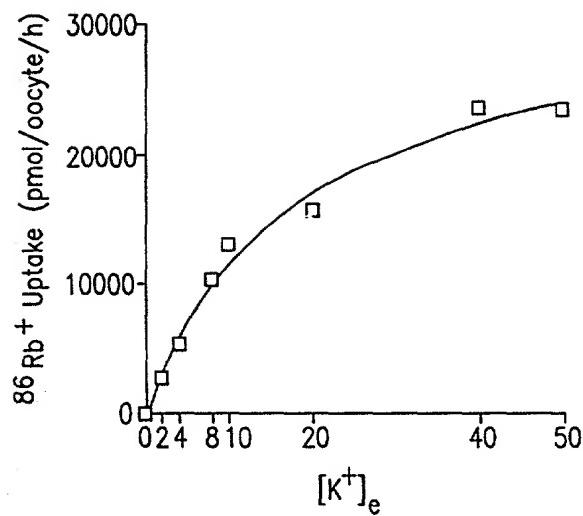


FIG. 9A

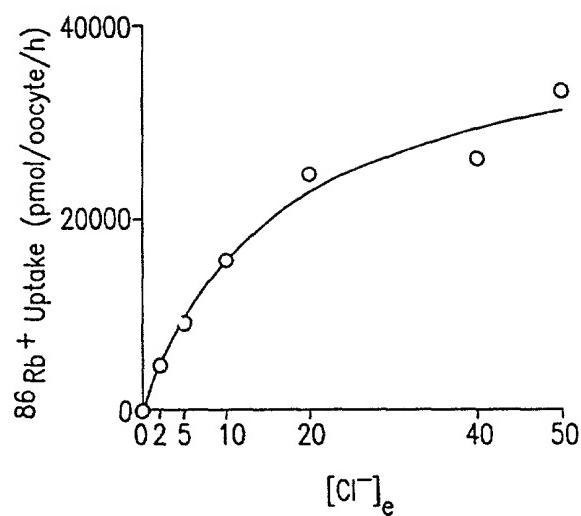


FIG. 9B

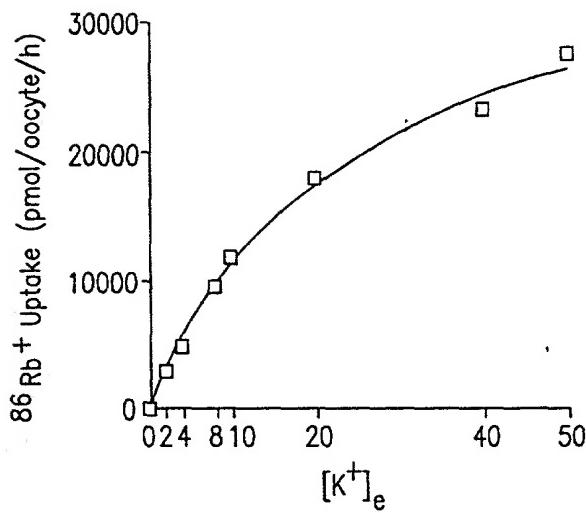


FIG. 9C

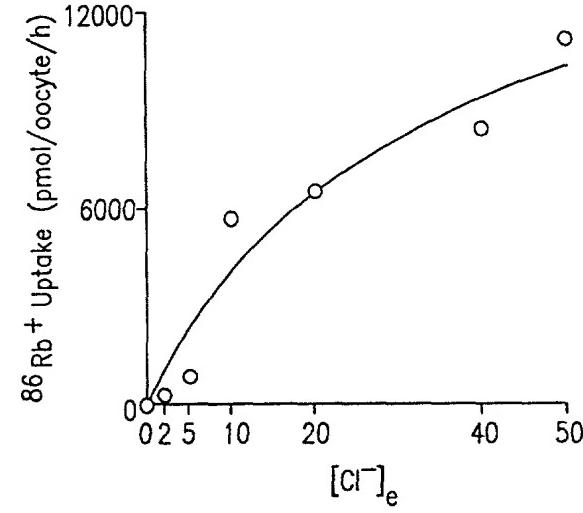


FIG. 9D

COPY

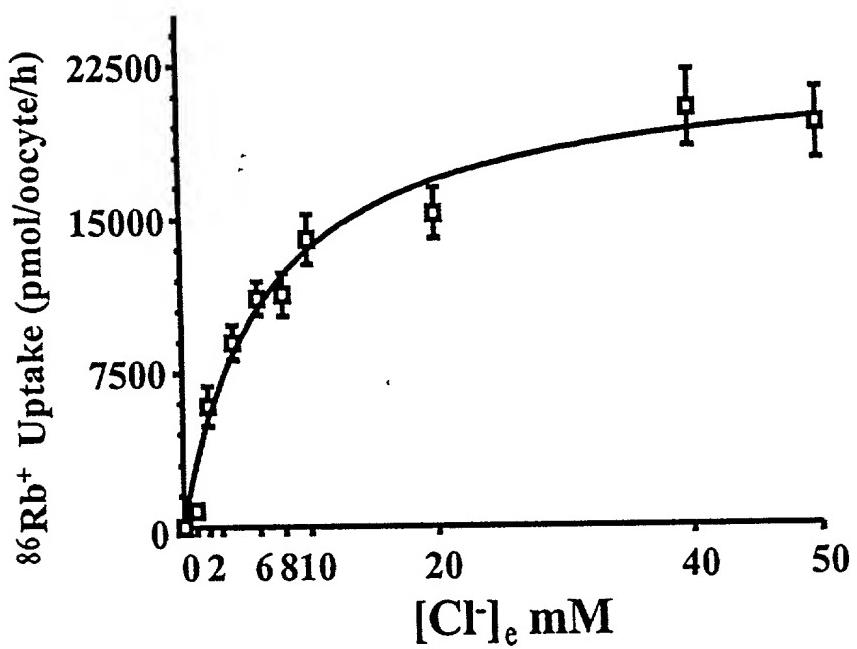
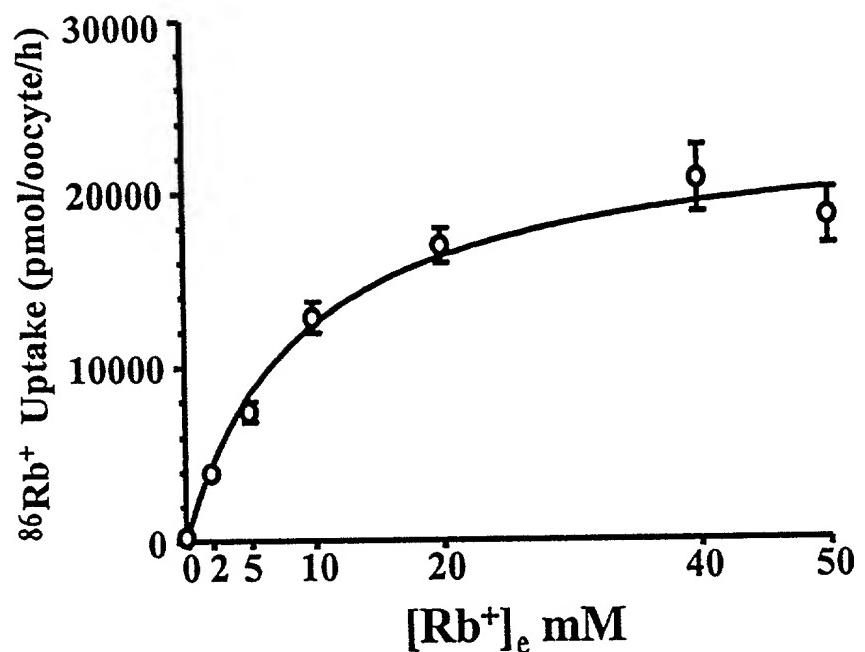


FIG. 10

COPY

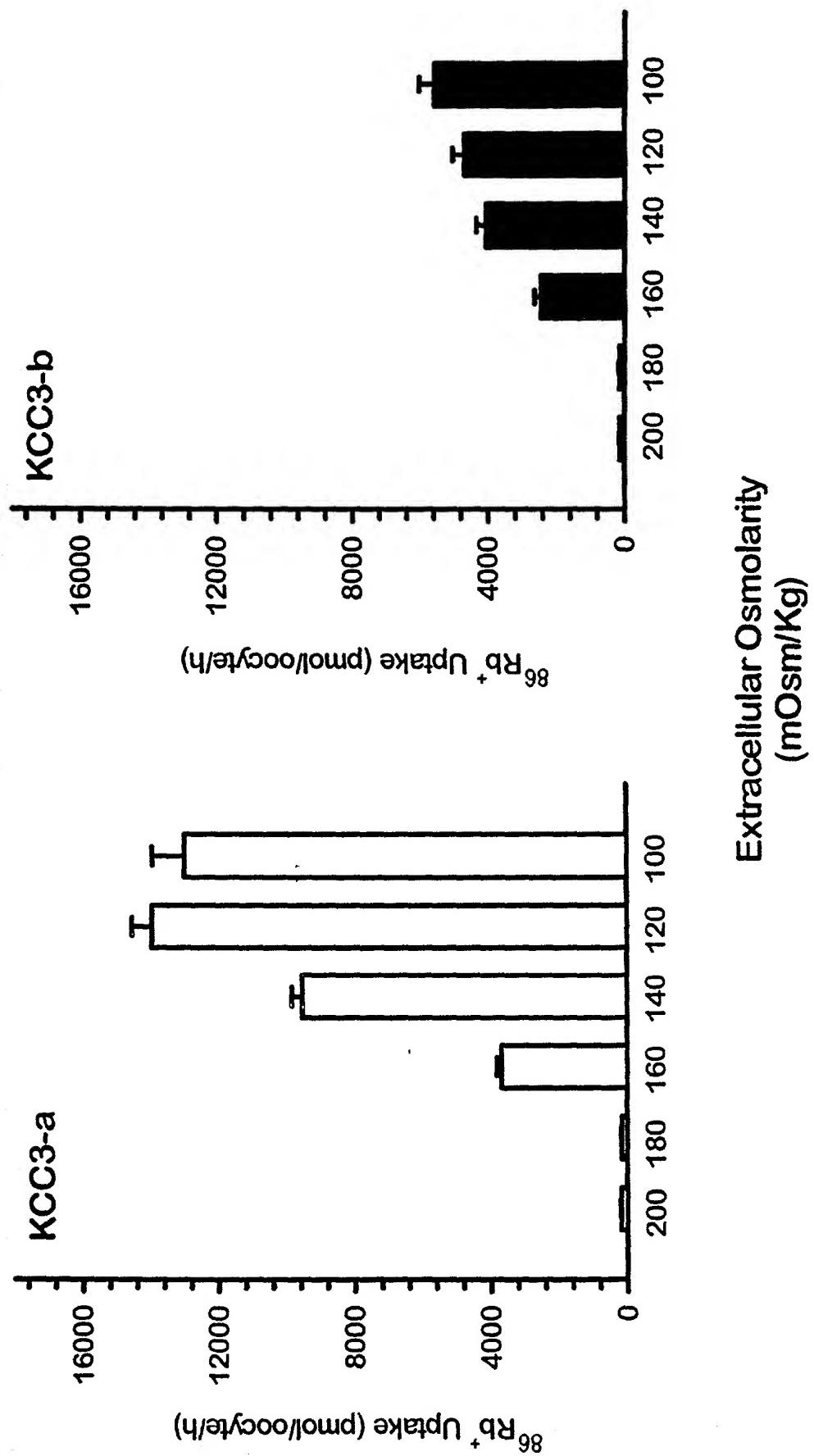


FIG. 11

COPY

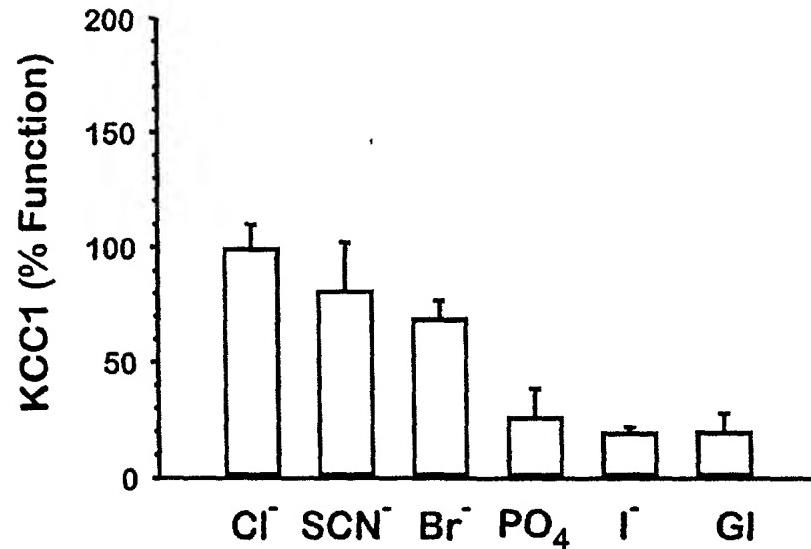
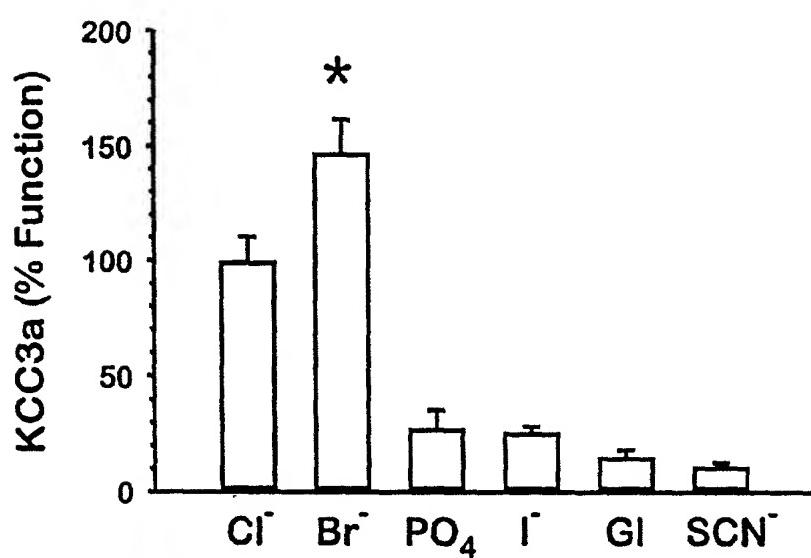
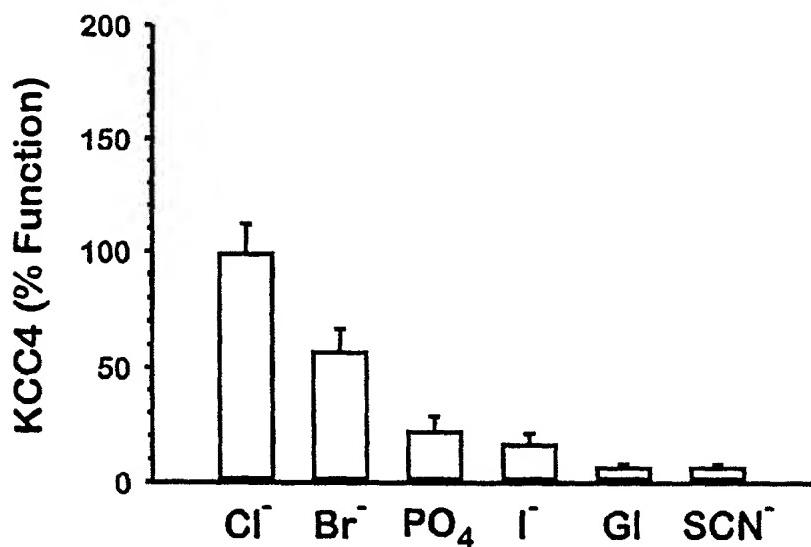


FIG. 12

Title: Purified and Isolated Potassium-Chloride Cotransporter
Nucleic Acids and Polypeptides and Their Use and
Screening Methods Using Same
Applicant(s): Mount et al.
Serial No.: 09/835,976

COPY

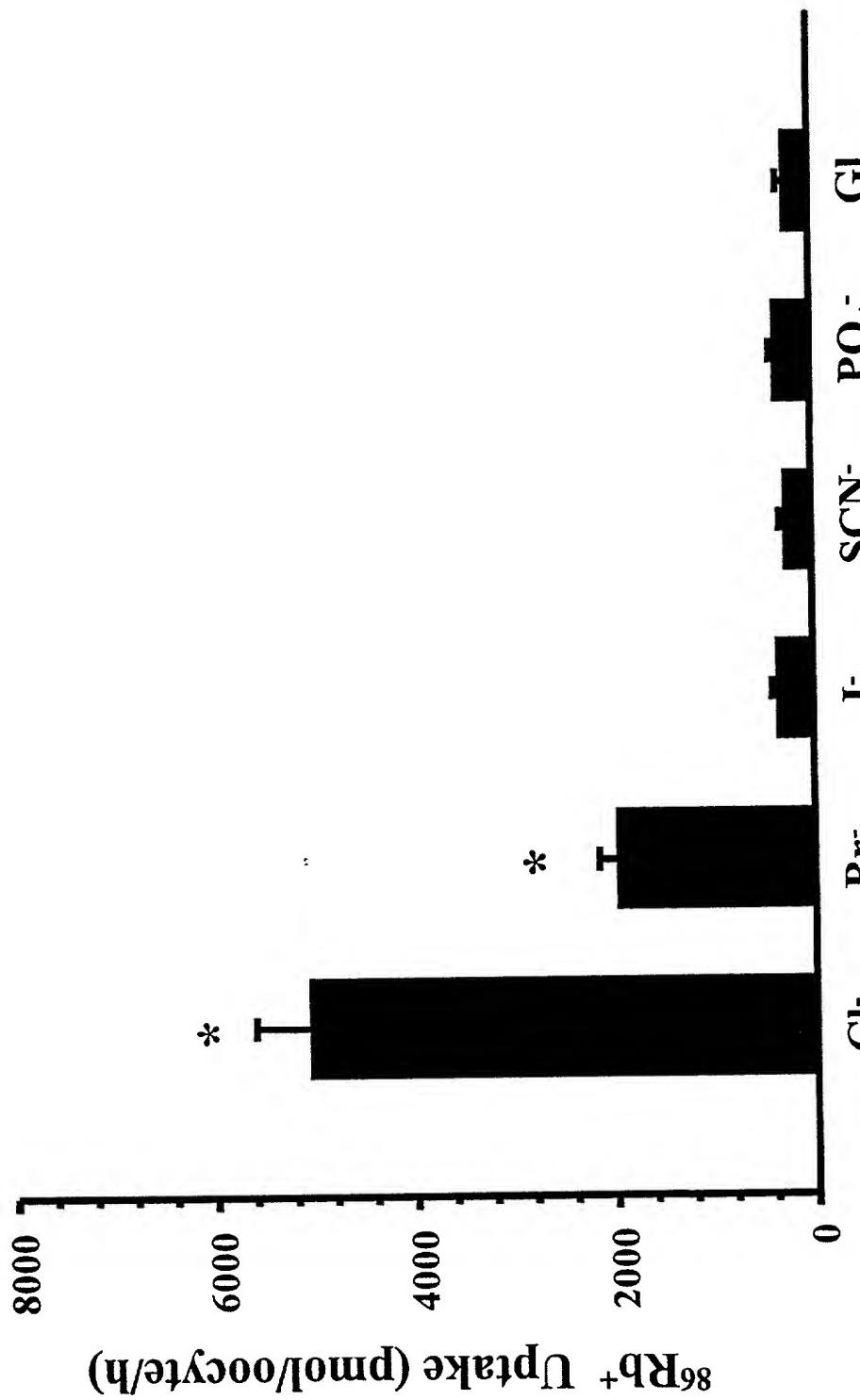


FIG. 13

COPY

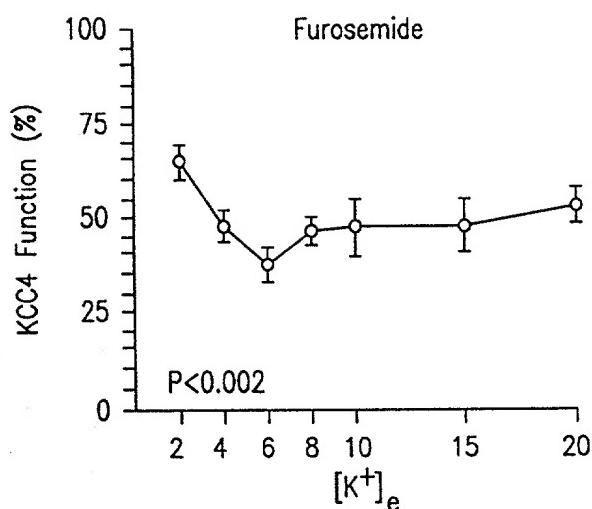


FIG. 14A

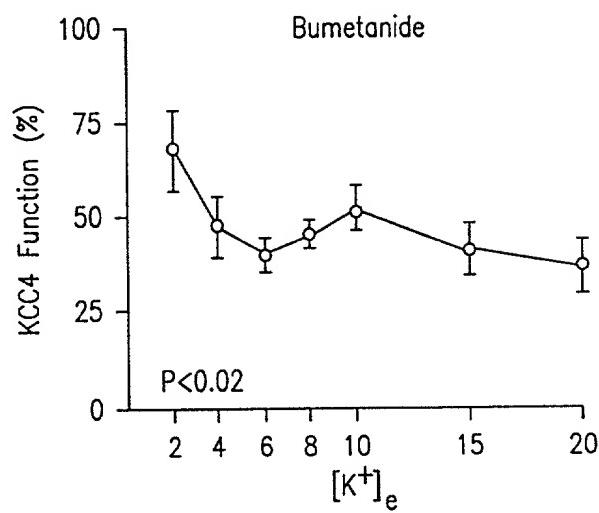


FIG. 14B

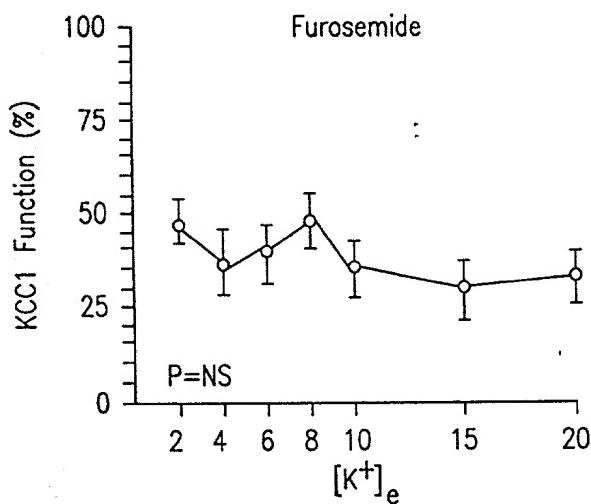


FIG. 14C

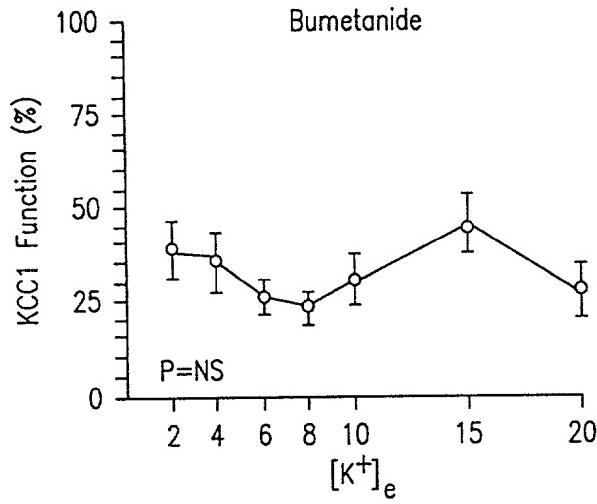


FIG. 14D

COPY

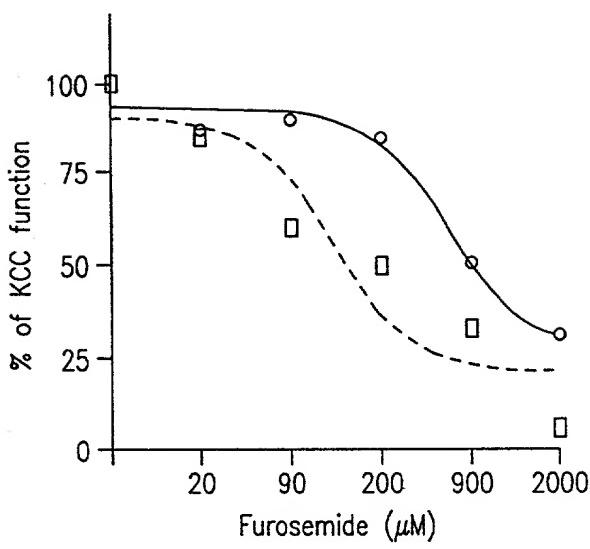


FIG. 15A

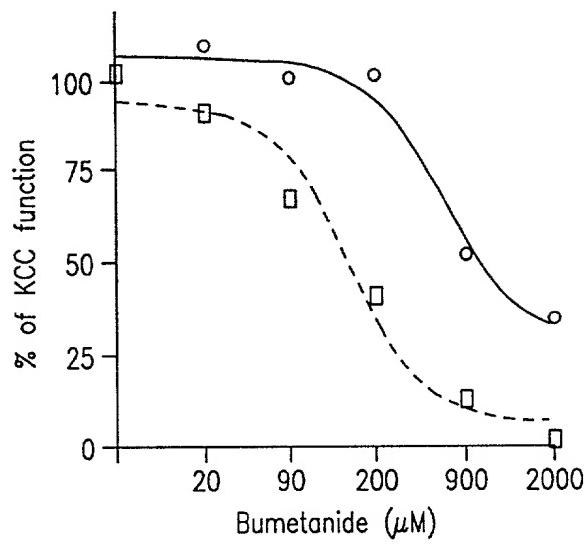


FIG. 15B

COPY

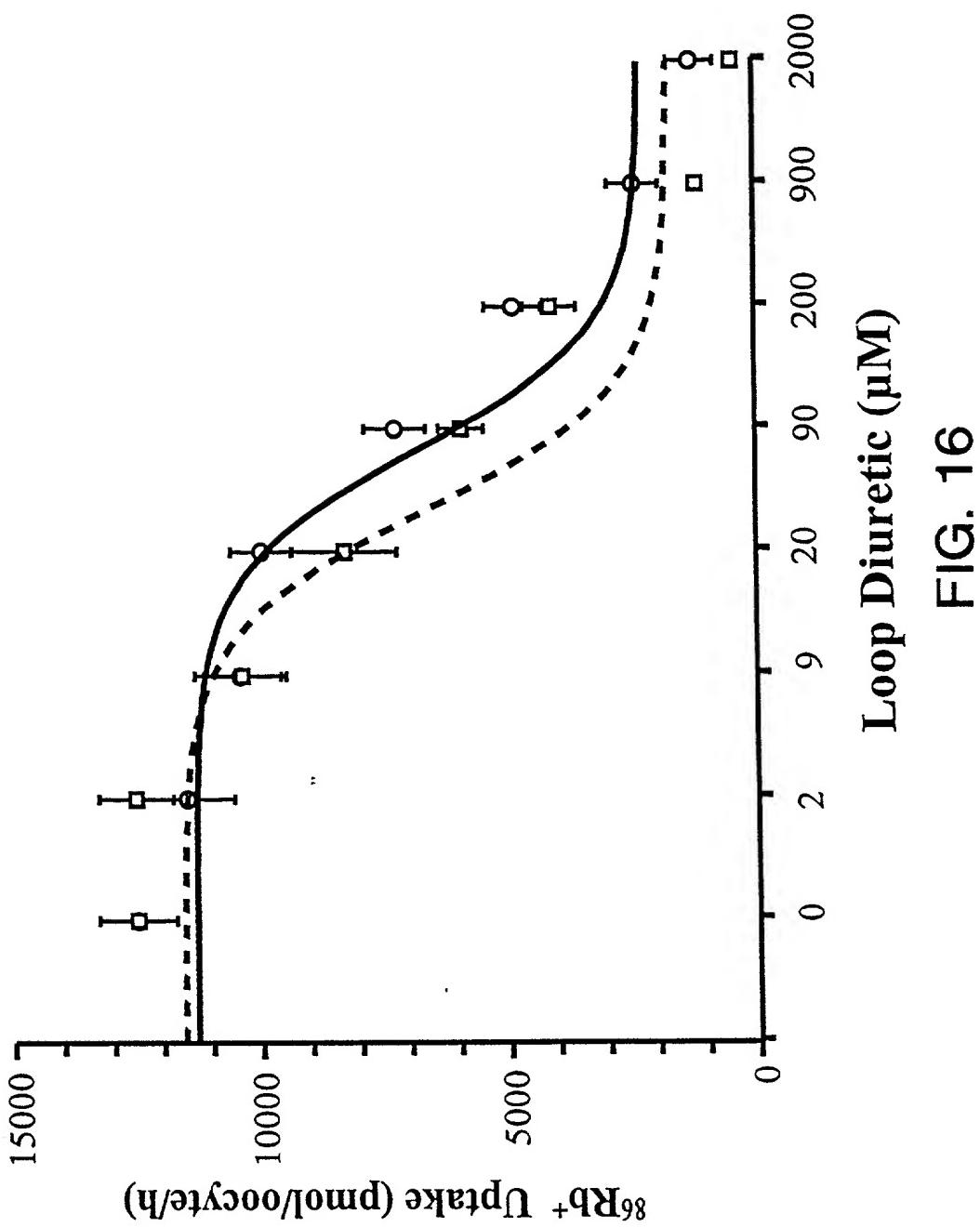


FIG. 16

COPY

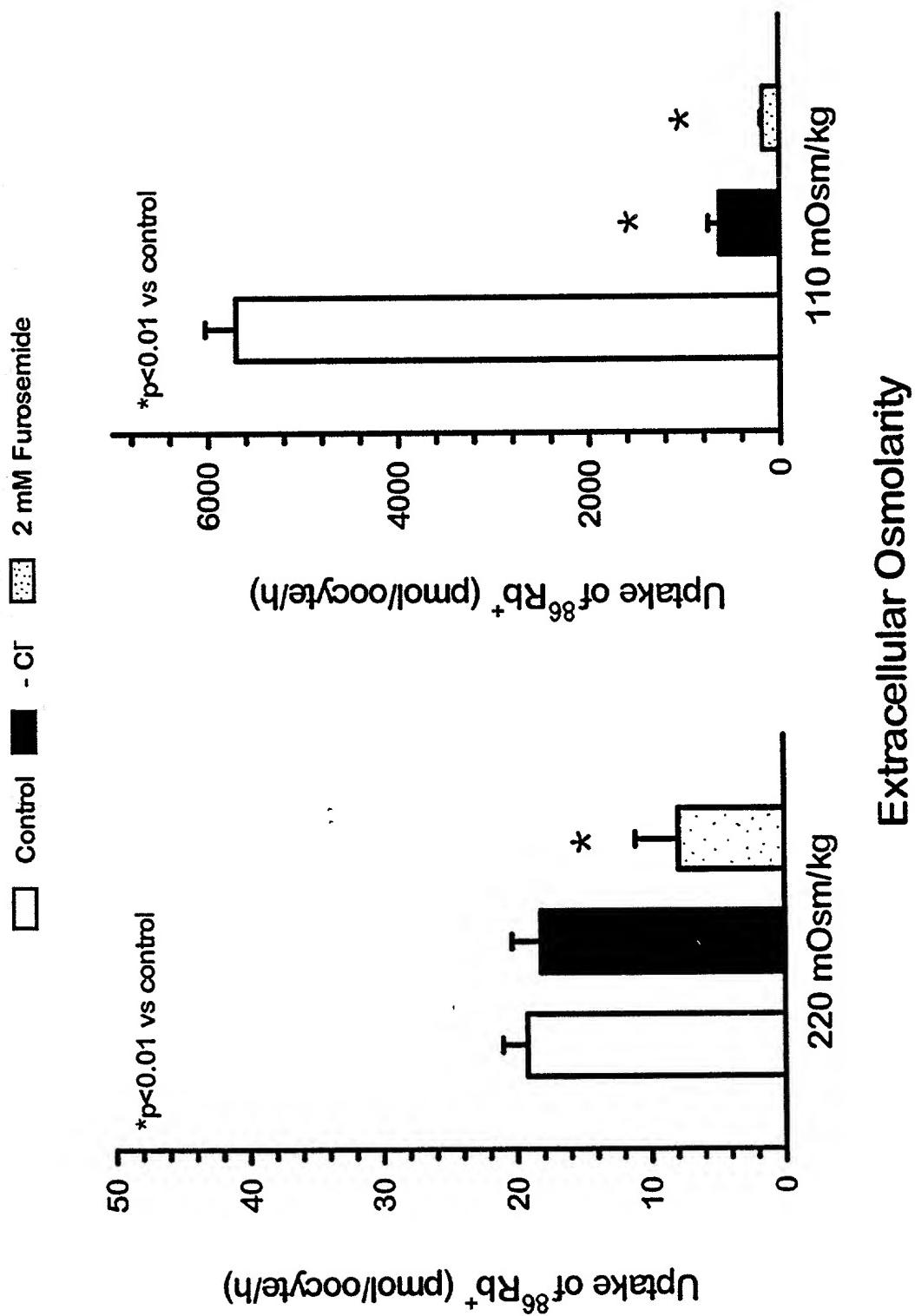


FIG. 17

COPY

DIDS (100 μ M)

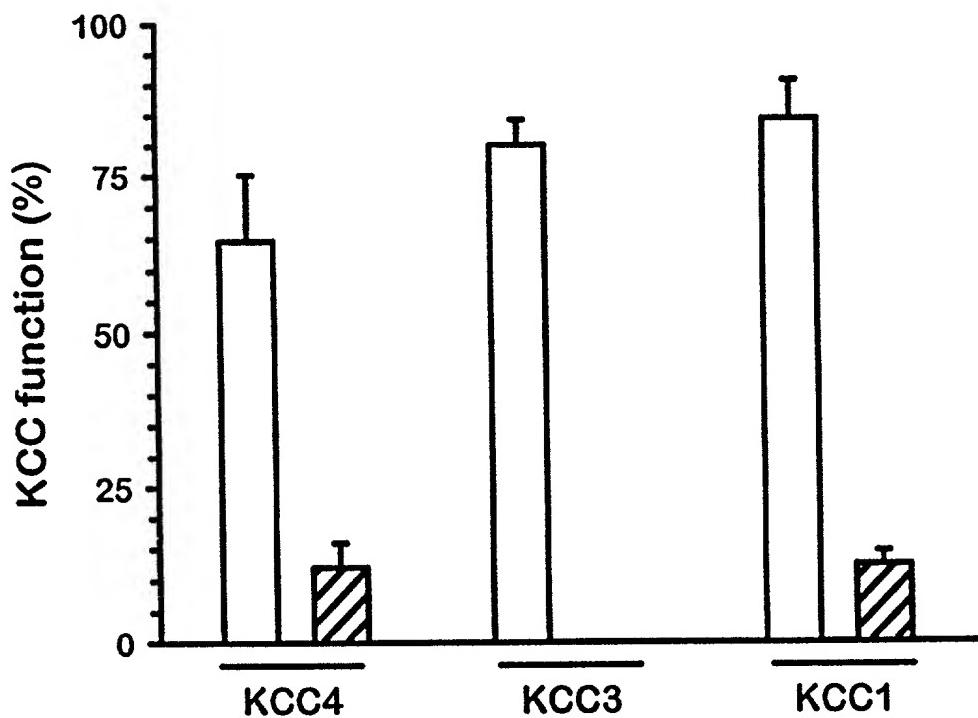


FIG. 18A

DIOA (100 μ M)

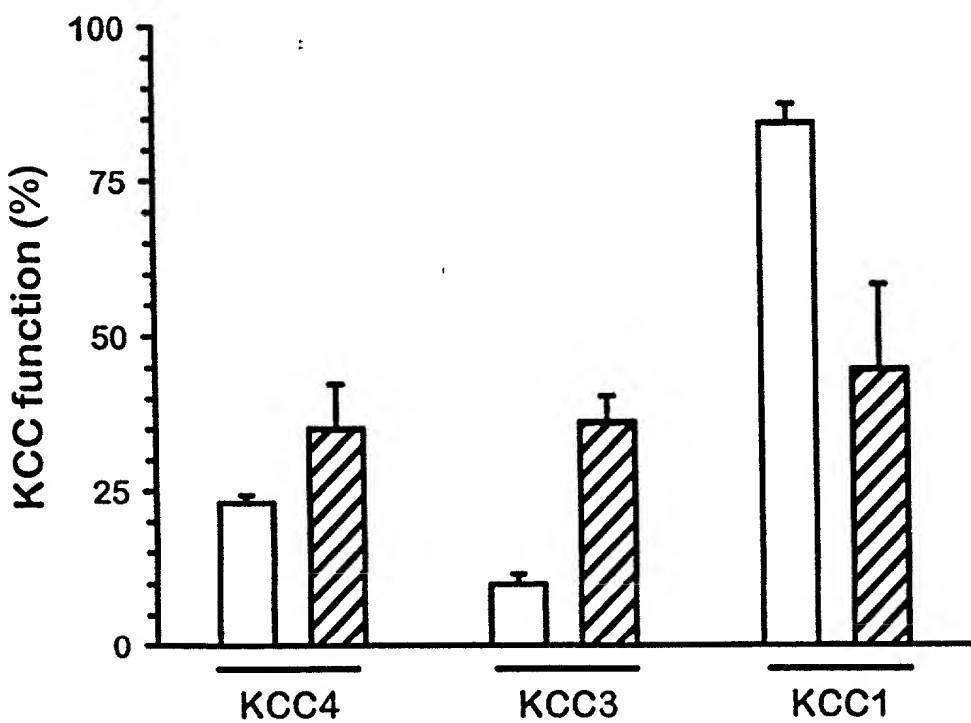


FIG. 18B

COPY

SEARCHED INDEXED SERIALIZED FILED

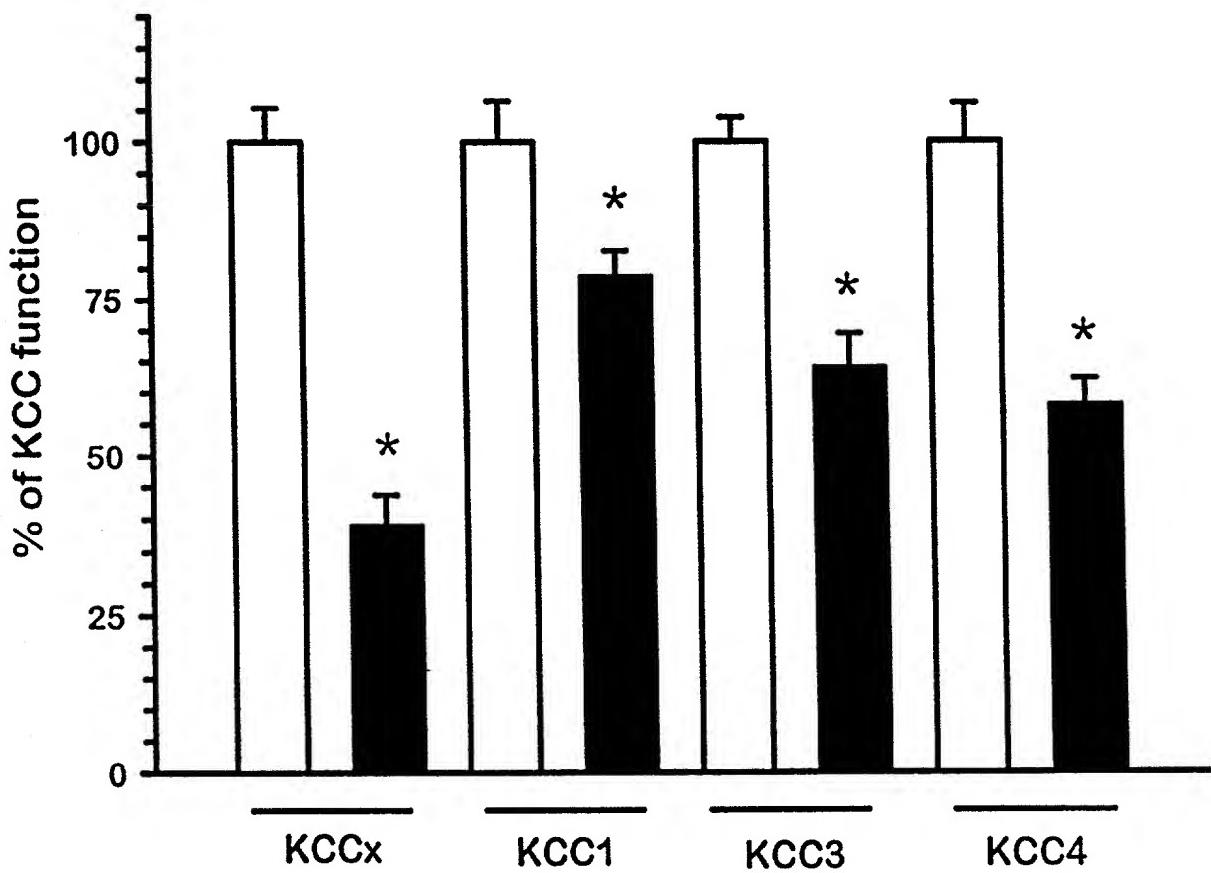


FIG. 19

COPY

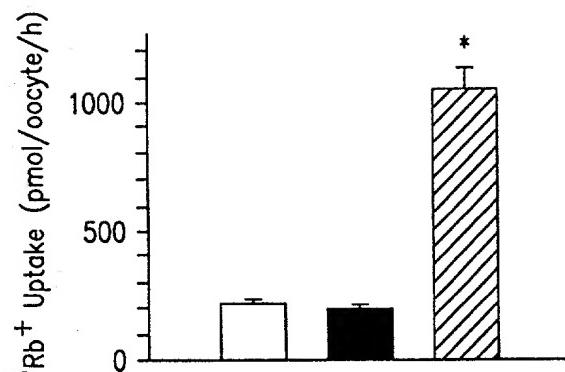


FIG. 20A

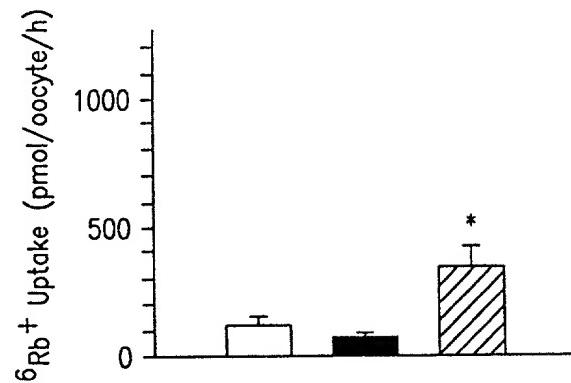


FIG. 20B

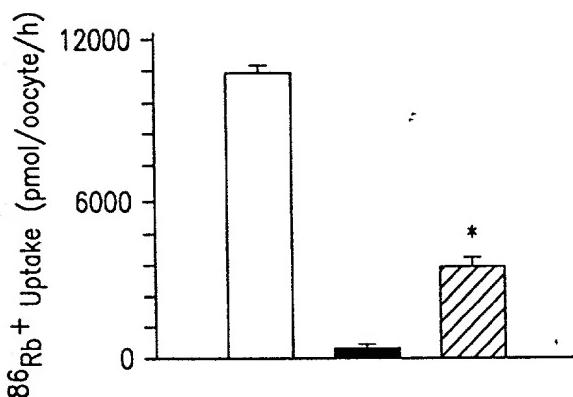


FIG. 20C

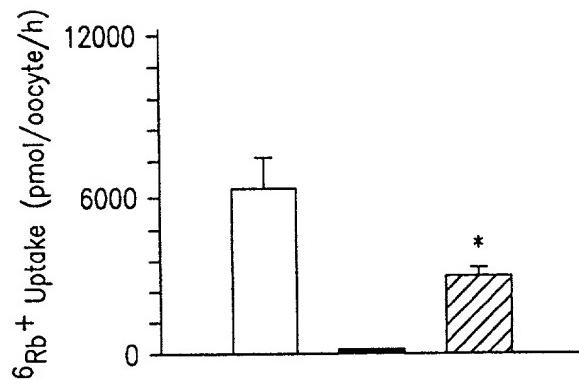
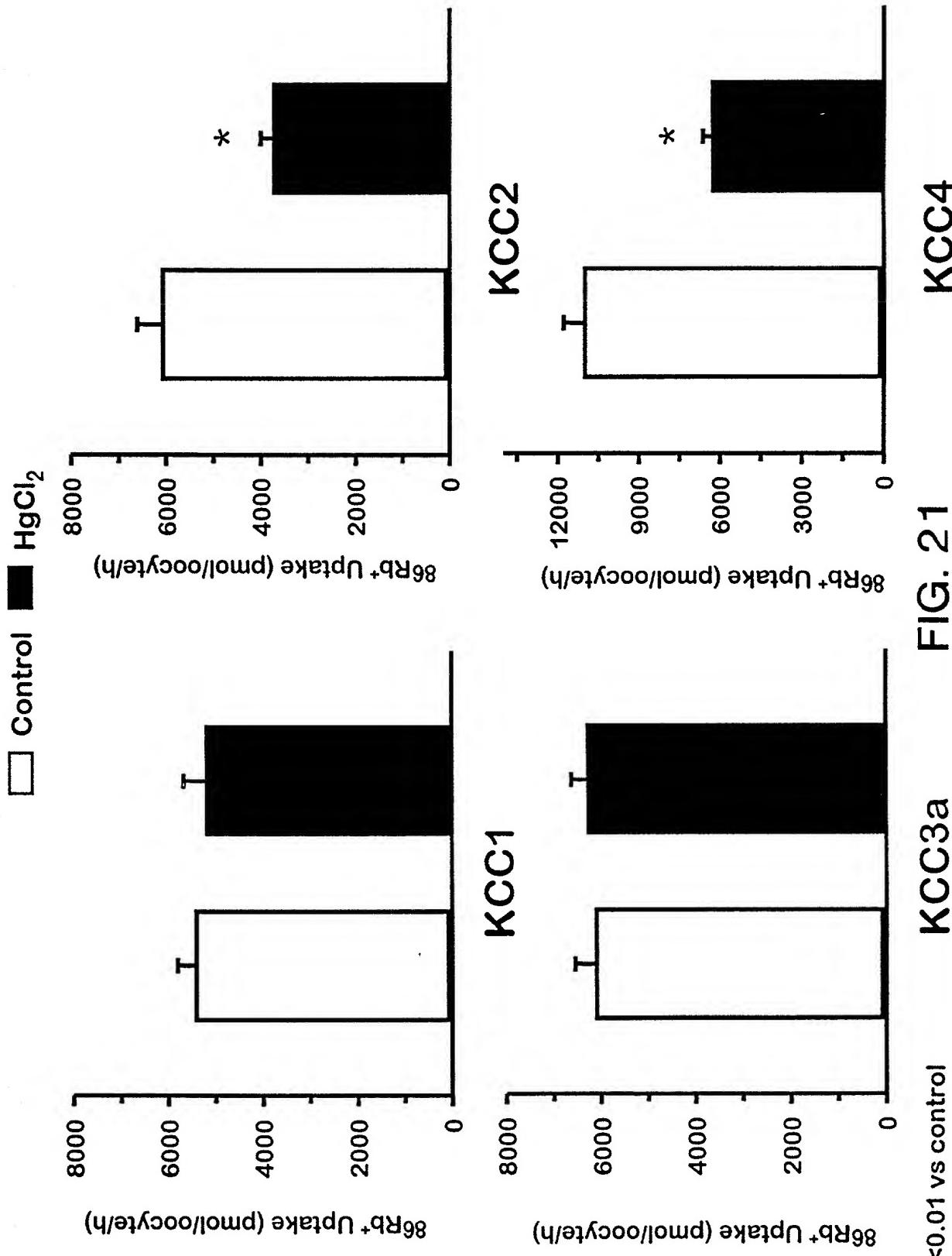


FIG. 20D

COPY



*p<0.01 vs control

FIG. 21

COPY

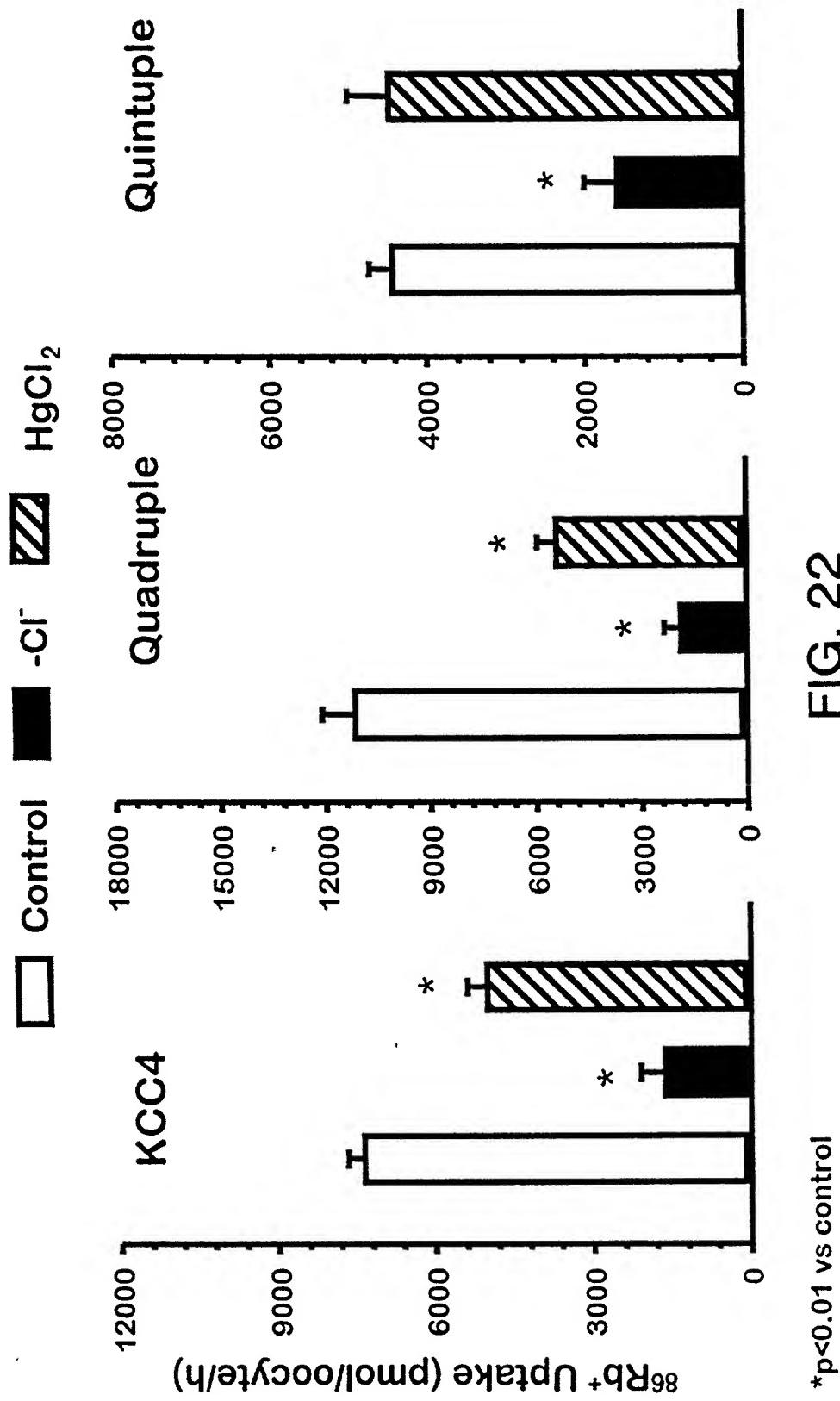


FIG. 22

*p<0.01 vs control

COPY

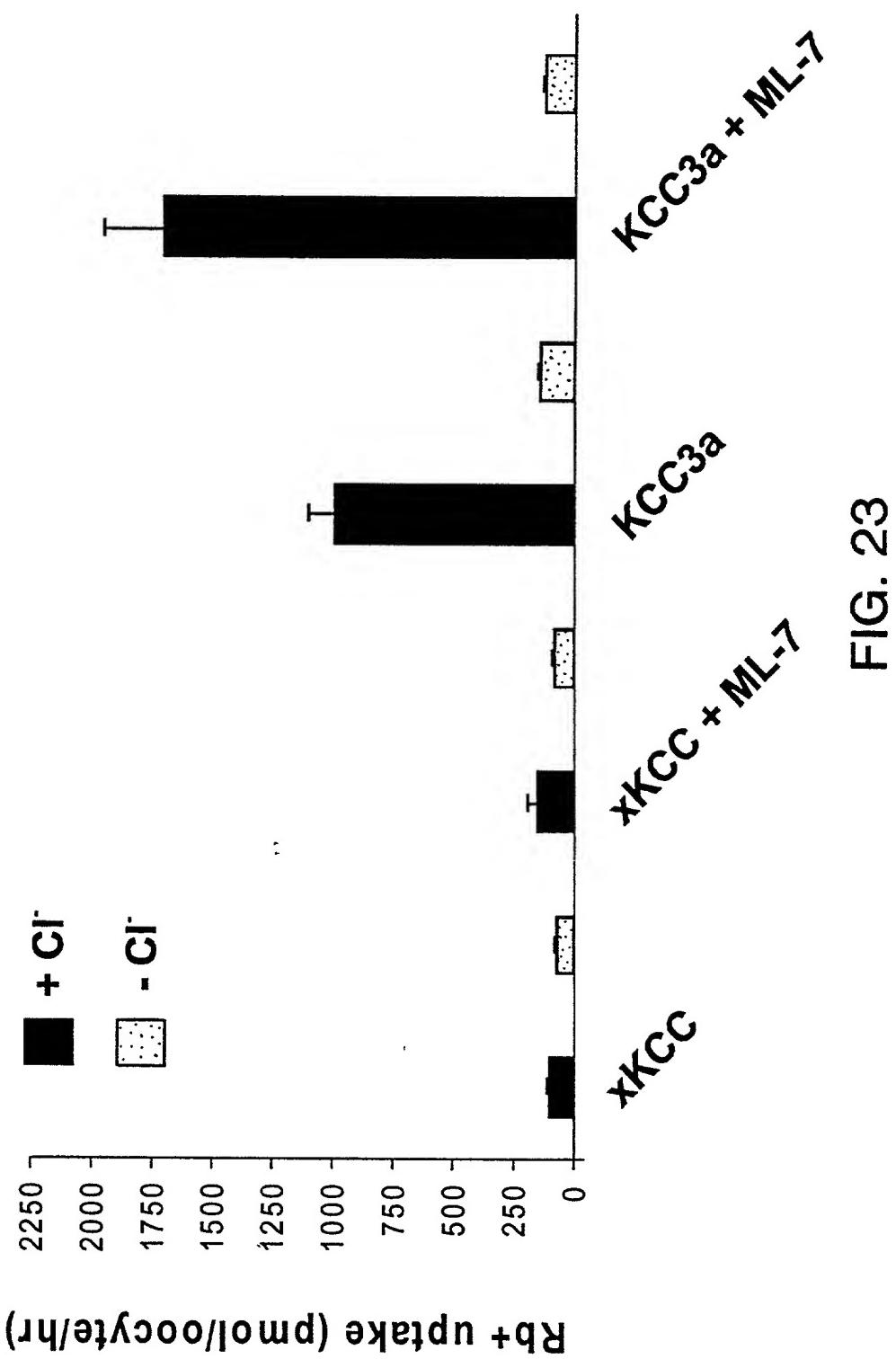


FIG. 23

COPY

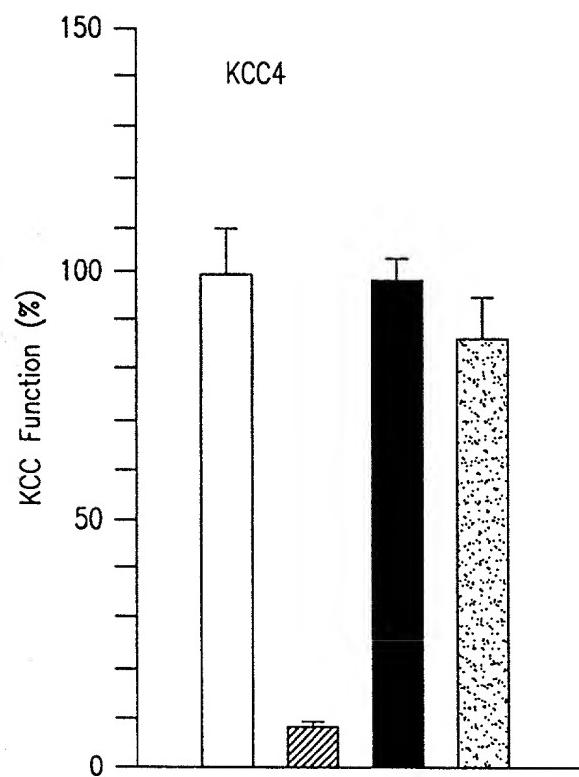


FIG. 24A

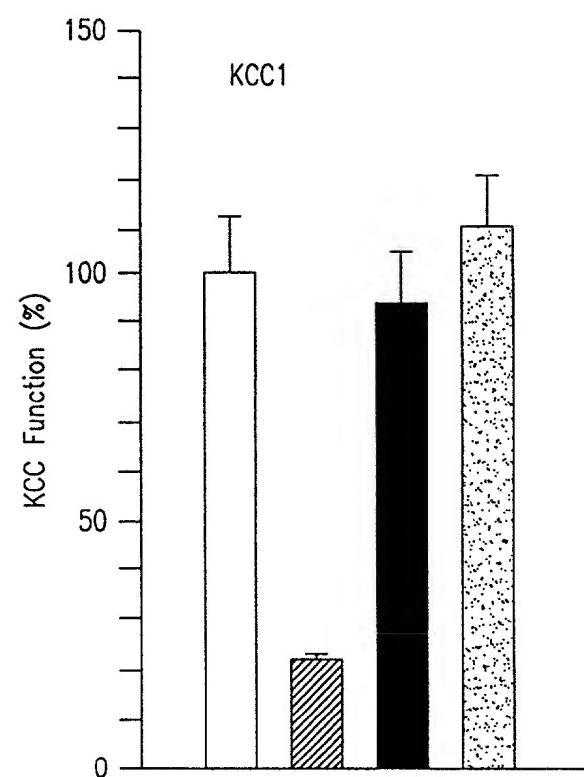


FIG. 24B

COPY

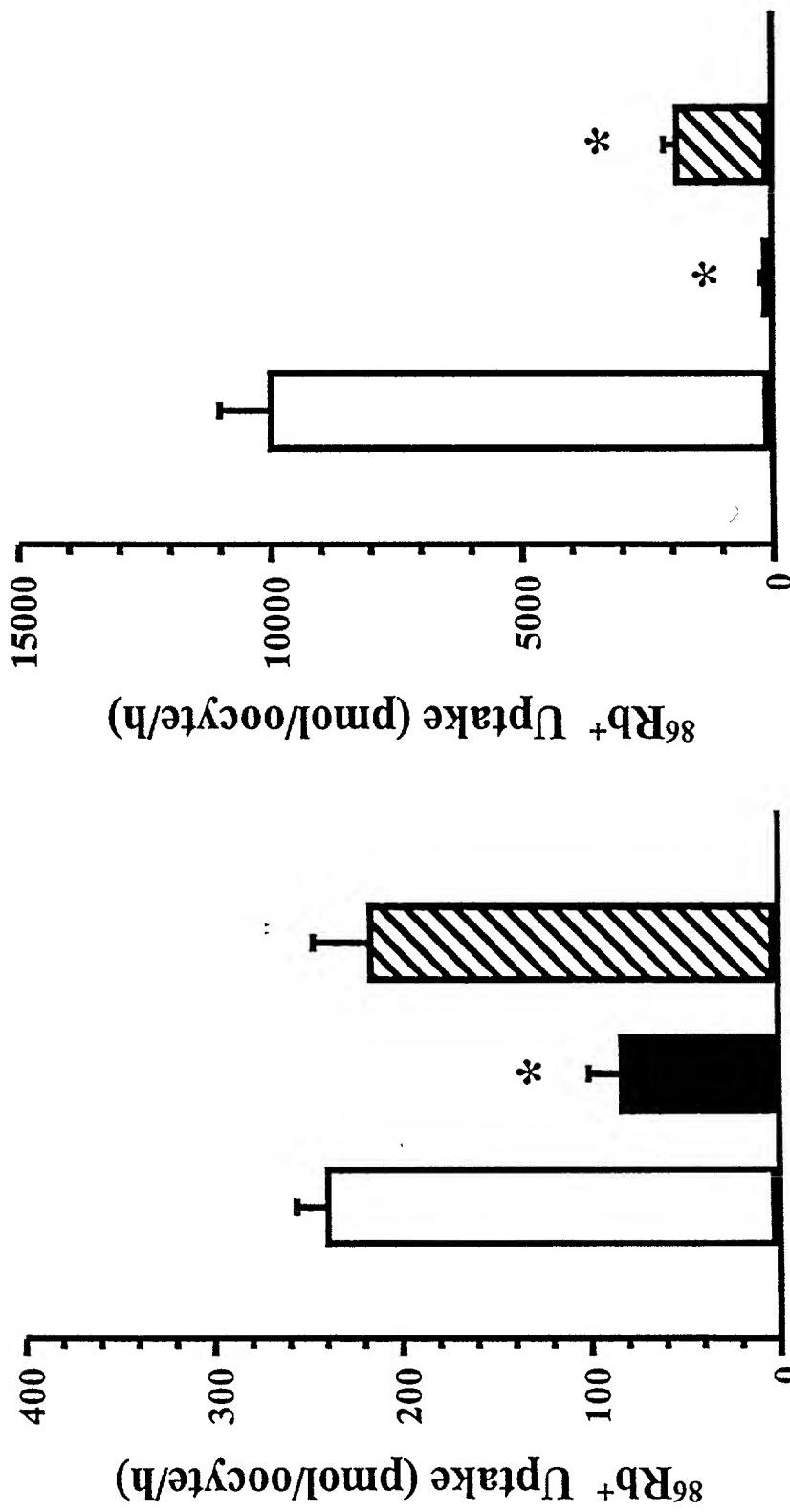


FIG. 25B

FIG. 25A

COPY

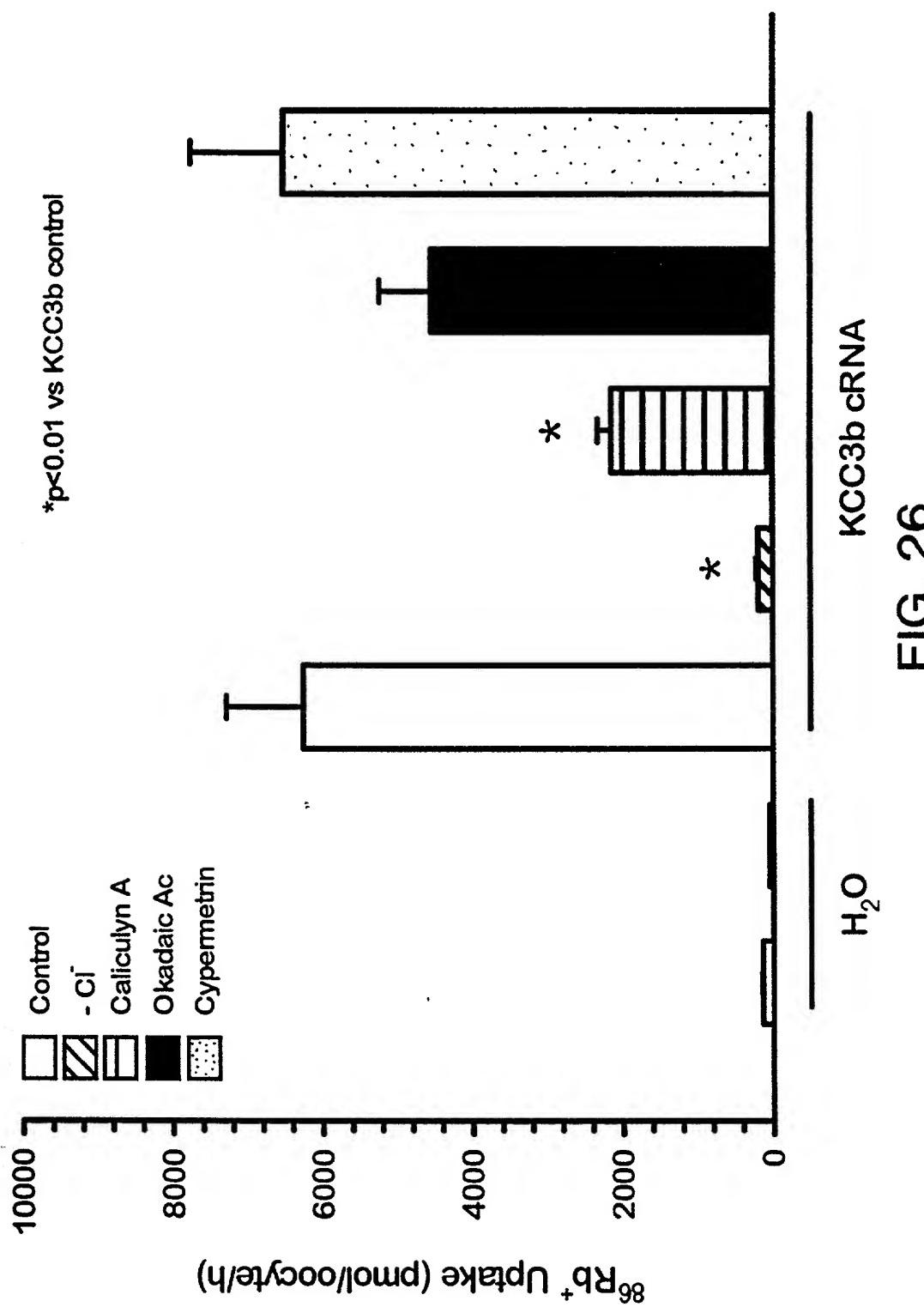


FIG. 26

COPY

KCC2/NT2-N

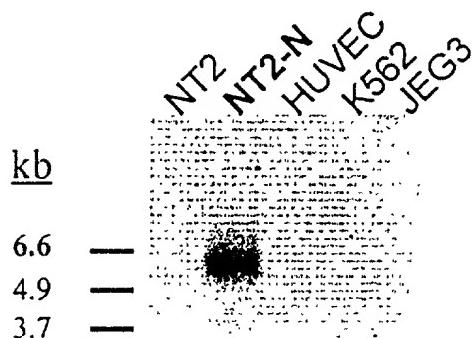


FIG. 27A

Mouse KCC3

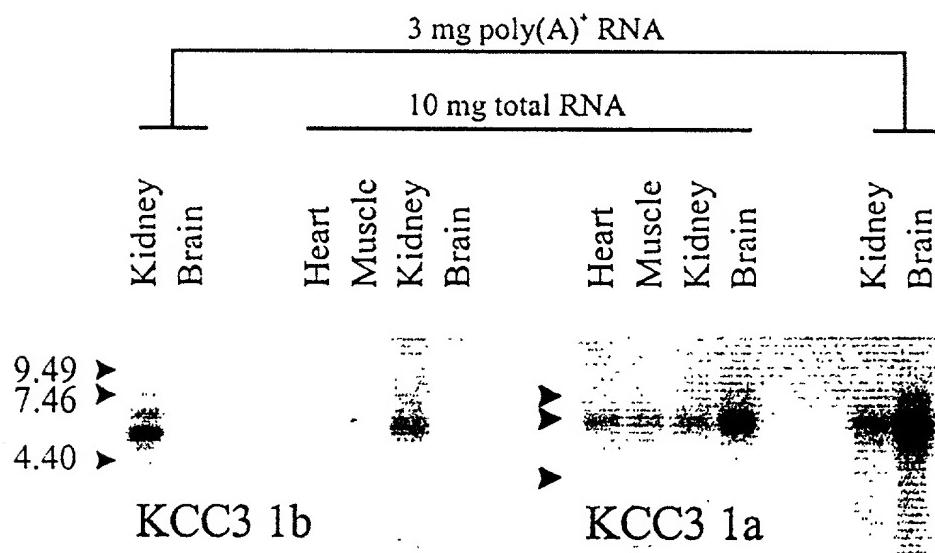


FIG. 27B

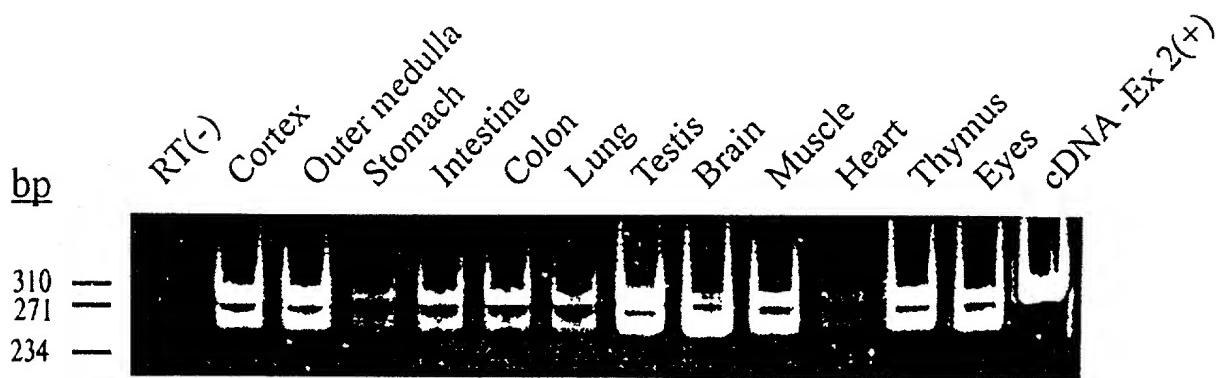


FIG. 27C

COPY

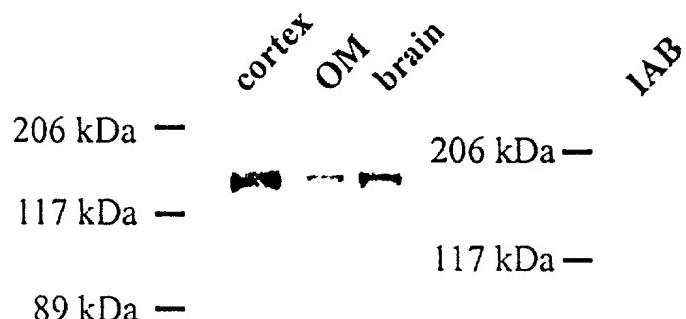


FIG. 27D

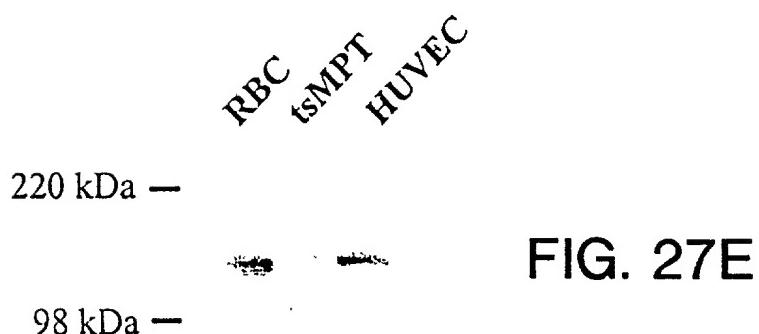


FIG. 27E

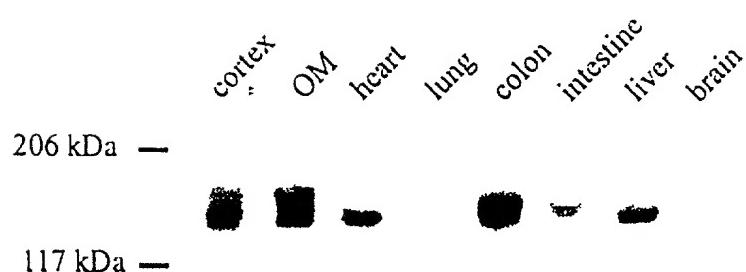


FIG. 27F

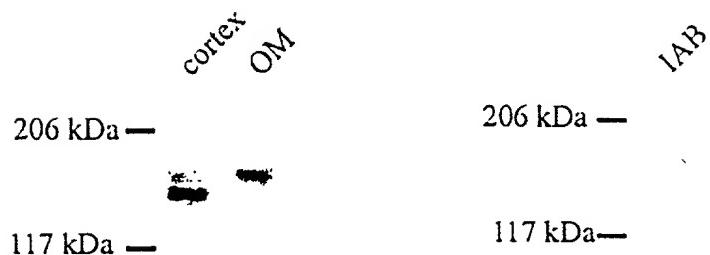
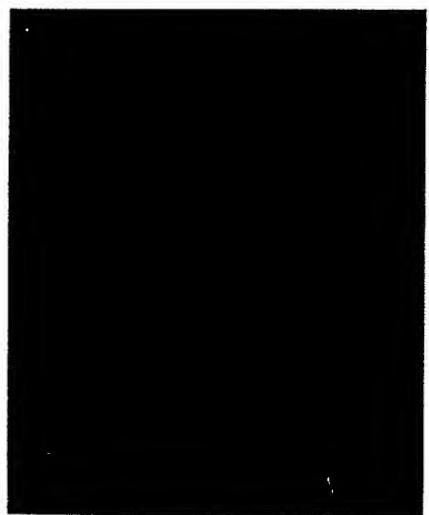
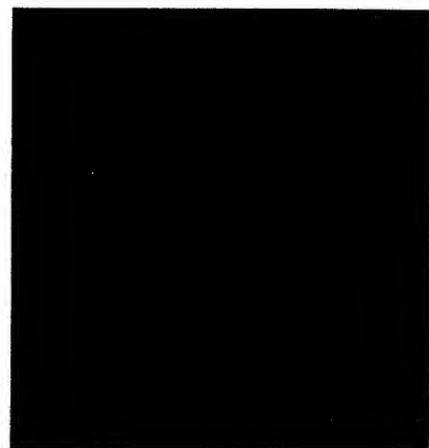


FIG. 27G

FIG. 27H

Title: Purified and Isolated Potassium-Chloride Cotransporter
Nucleic Acids and Polypeptides and Therapeutic and
Screening Methods Using Same
Applicant(s): Mount et al.
Serial No.: 09/835,976

COPY



KCC1 —

KCC2 —

KCC3 —

KCC4 —

+/-

FIG. 27J

FIG. 27I

Title: Purified and Isolated Potassium-Chloride Cotransporter
Fatty Acids and Polypeptides and Therapeutic
Enhancing Methods Using Same
Applicant(s): Mount et al.
Serial No.: 09/835,976

COPY

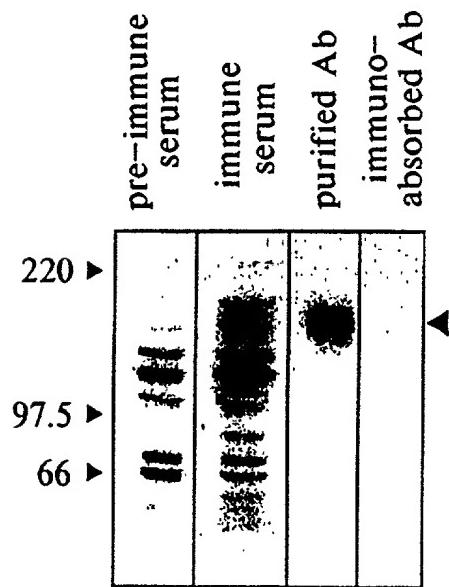


FIG. 28

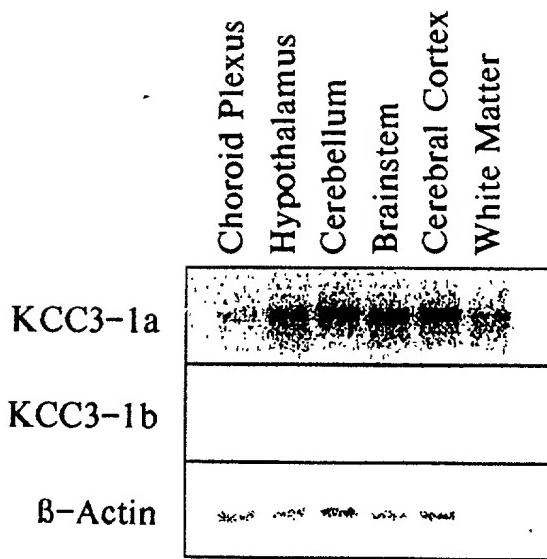


FIG. 29

Title: Purified and Isolated Potassium-Chloride Cotransporter
Nucleic Acids and Polypeptides and Therapeutic
Using Methods Using Same
Applicant(s): Mount et al.
Serial No.: 09/835,976

COPY

FIG. 30A

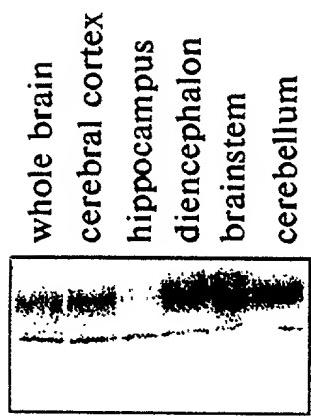


FIG. 30B

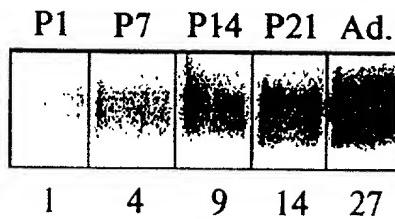
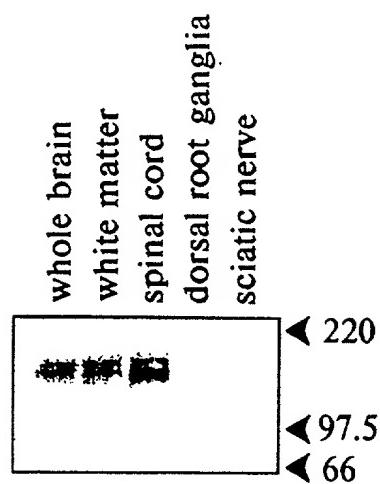


FIG. 30C

Title: Purified and Isolated Potassium-Chloride Cotransporter
Hypocampal Acids and Polypeptides and Therapeutic and
Screening Methods Using Same
Applicant(s): Mount et al.
Serial No.: 09/835,976

COPY

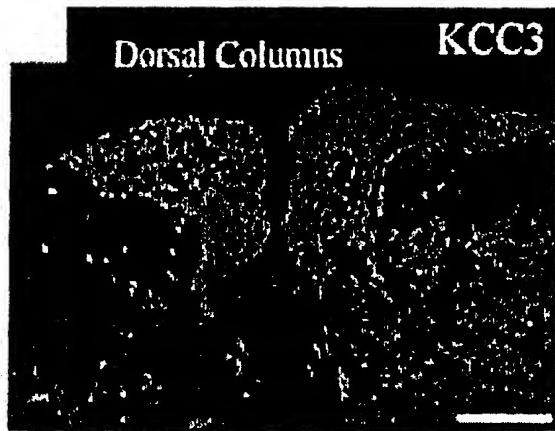


FIG. 31A

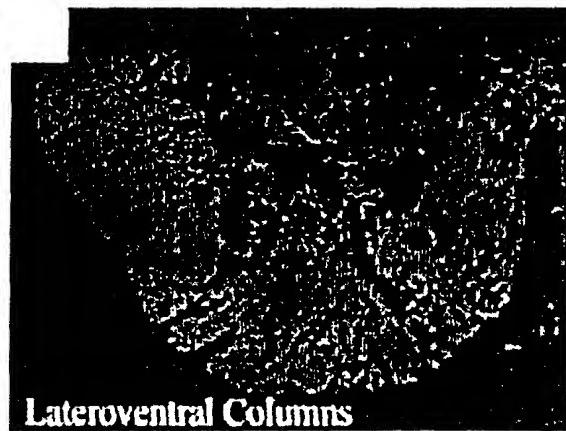


FIG. 31D

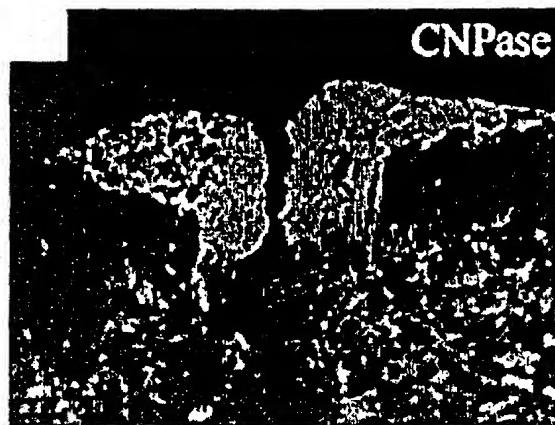


FIG. 31B

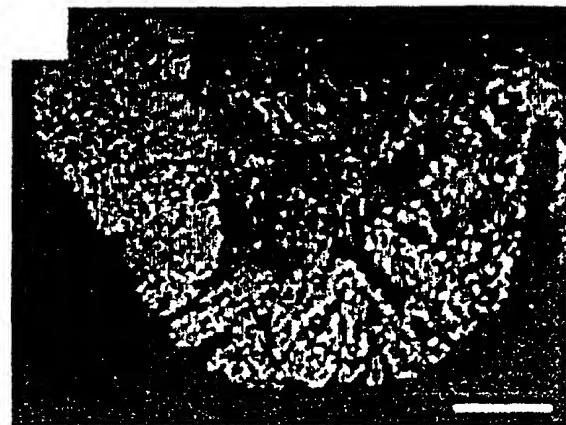


FIG. 31E

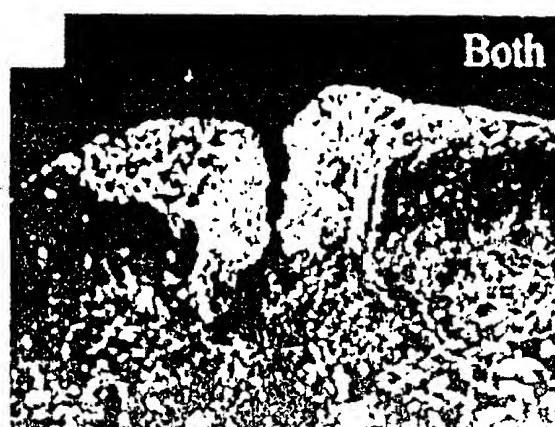


FIG. 31C

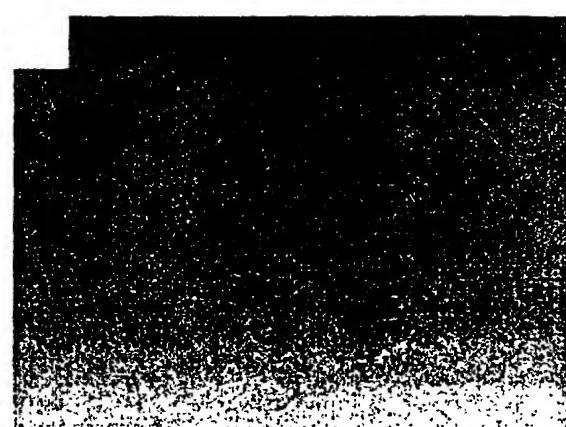


FIG. 31F

Title: Purified and Isolated Potassium-Chloride Cotransporter
Nucleic Acids and Polypeptides and Therapeutic and
Screening Methods Using Same
Applicant(s): Mount et al.
Serial No.: 09/835,976

COPY

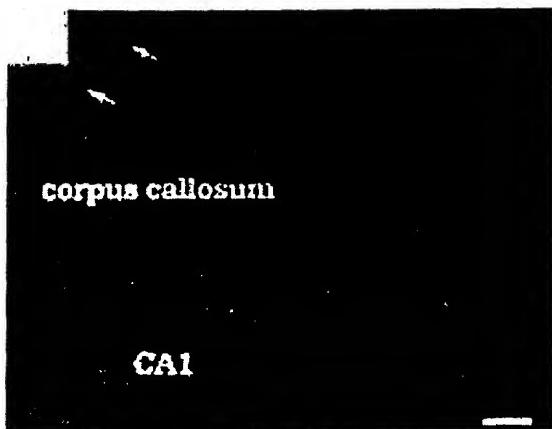


FIG. 32A

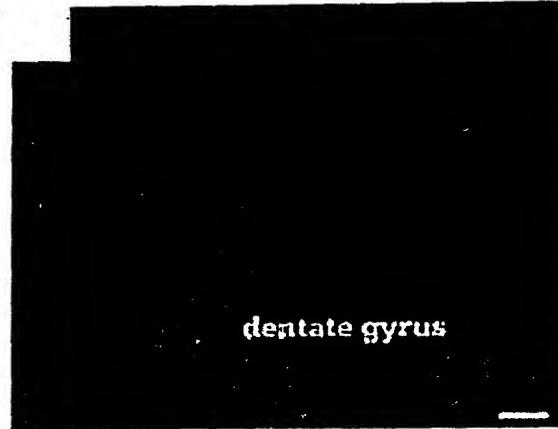


FIG. 32D

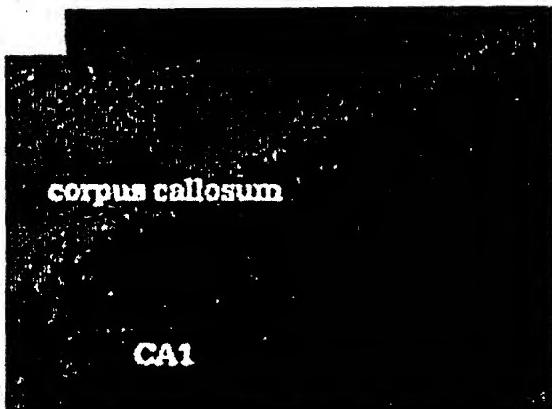


FIG. 32B



FIG. 32E

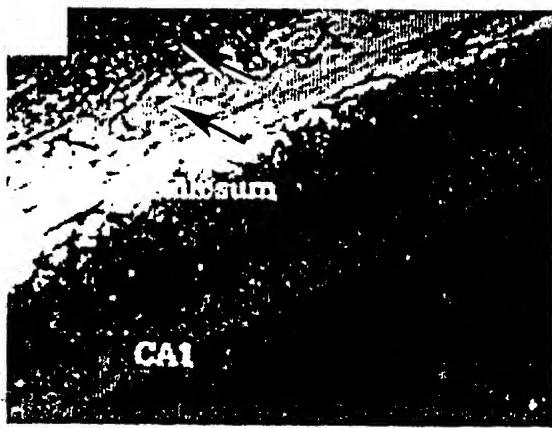


FIG. 32C

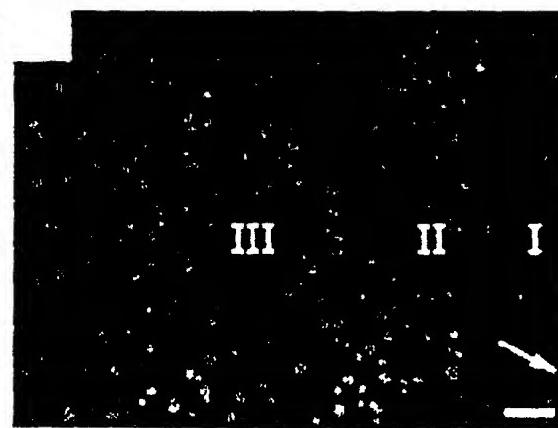


FIG. 32F

RECORDED BY OPTICAL COPIER

COPY

Targeting strategy

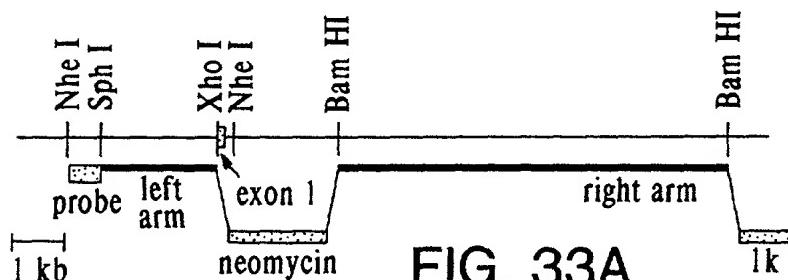


FIG. 33A

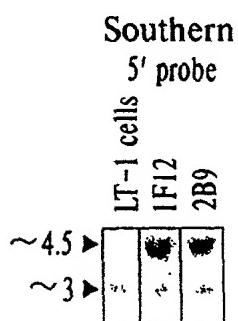


FIG. 33B

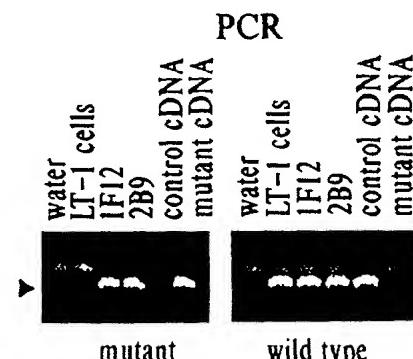


FIG. 33C

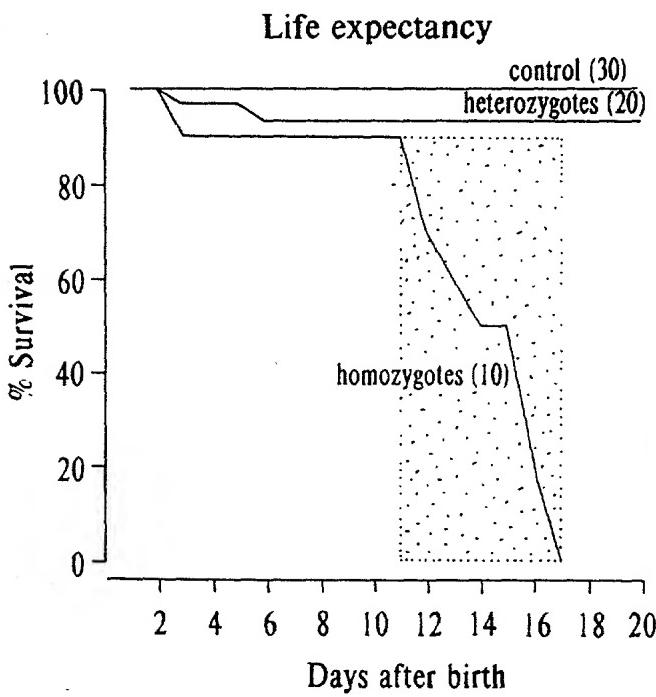


FIG. 33D

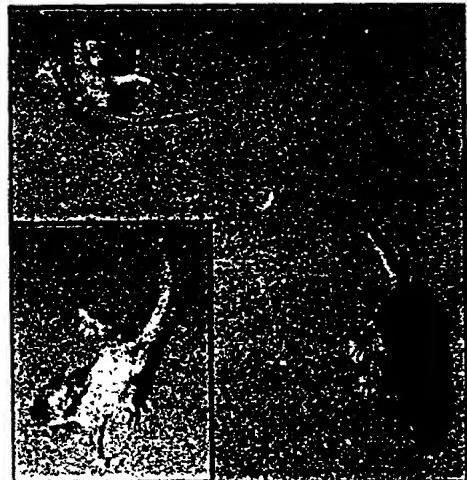
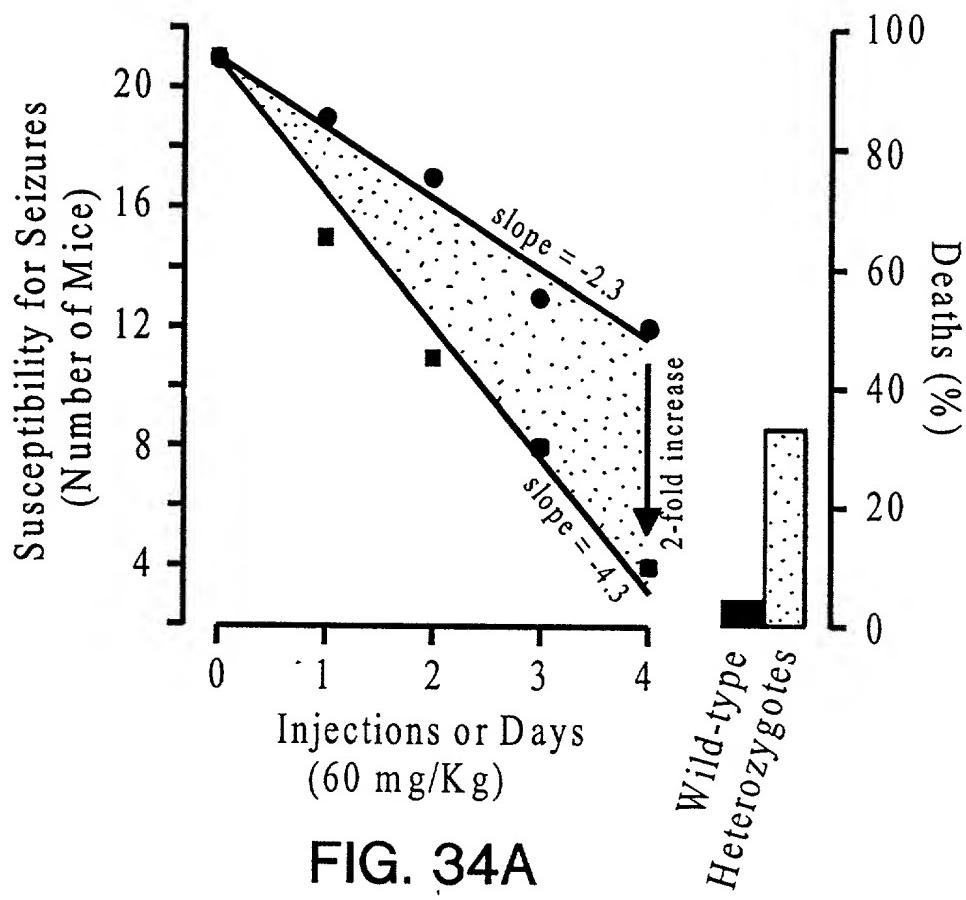


FIG. 33E

COPY



COPY

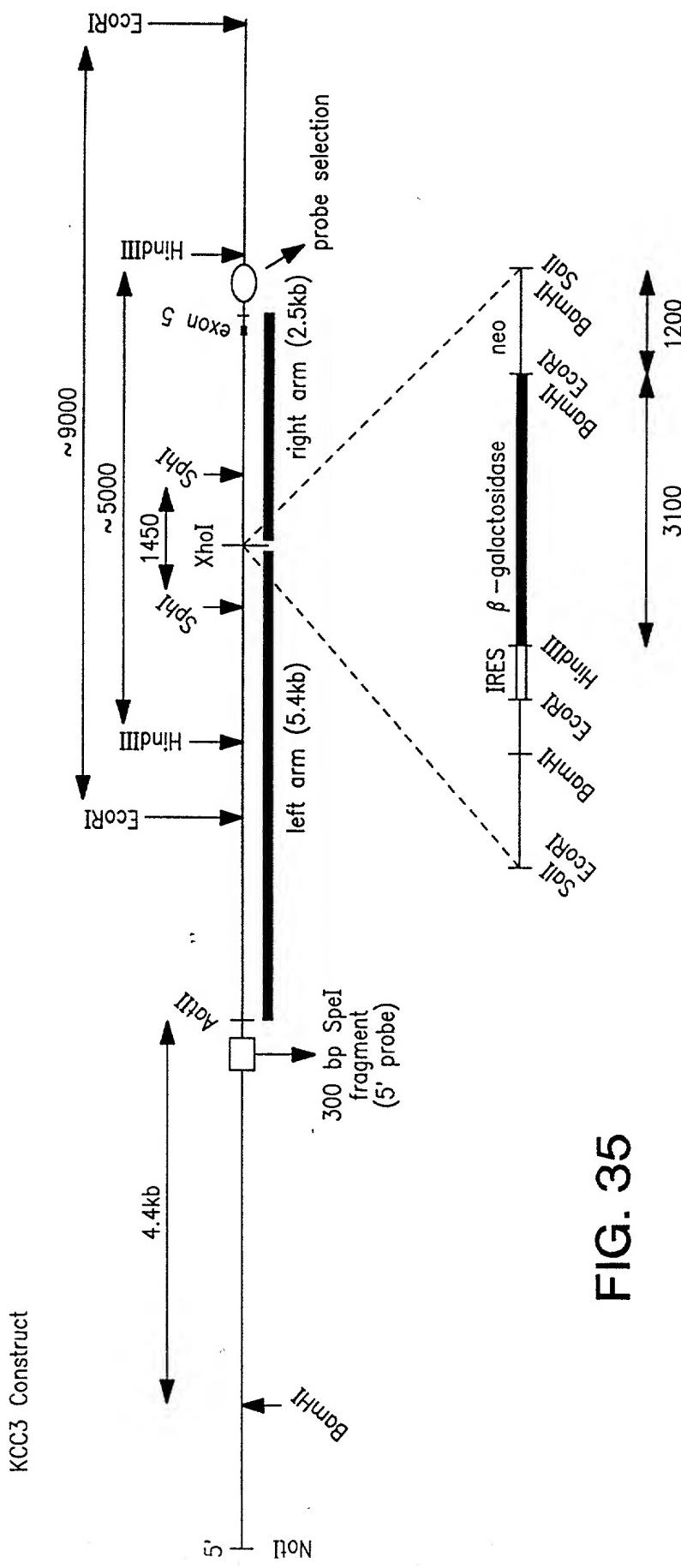


FIG. 35

COPY

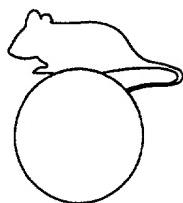
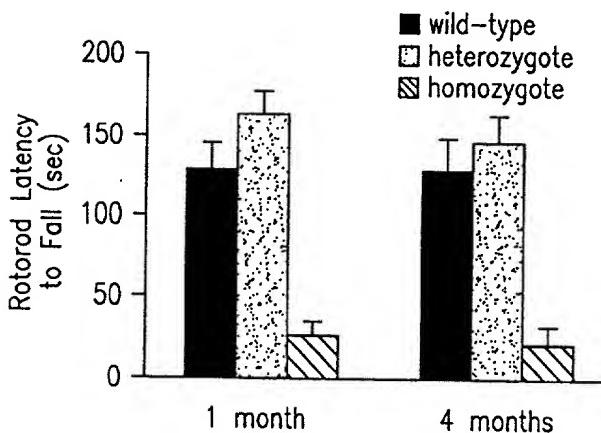


FIG. 36A

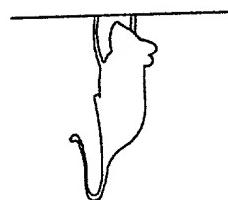
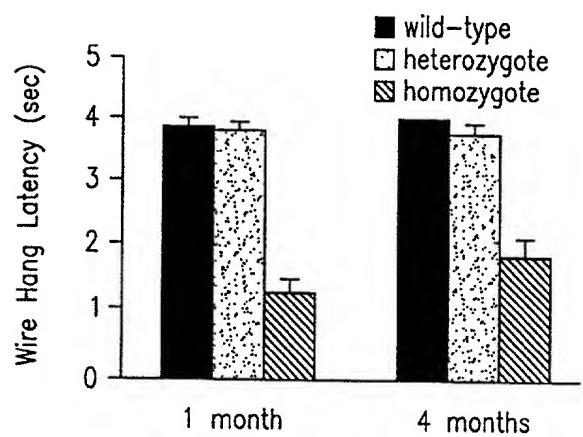


FIG. 36B

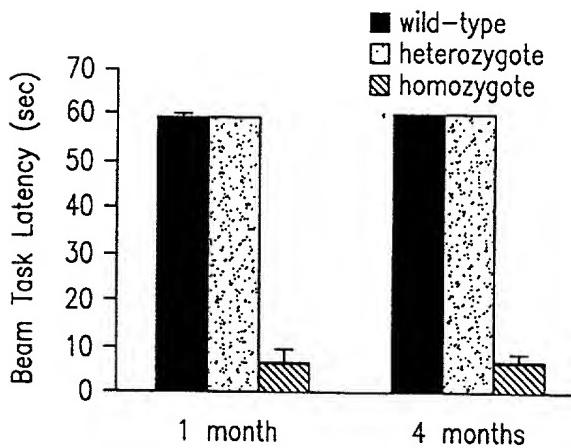


FIG. 36C

COPY

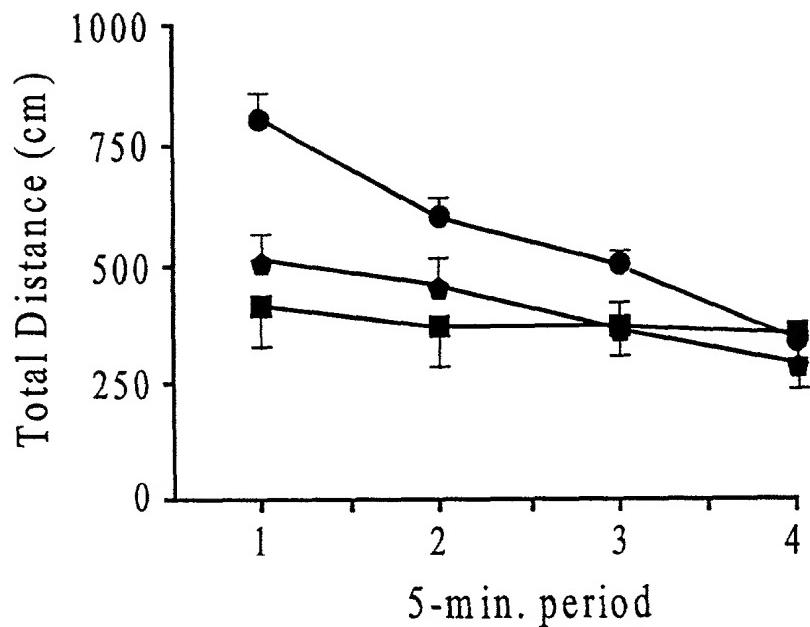


FIG. 37A

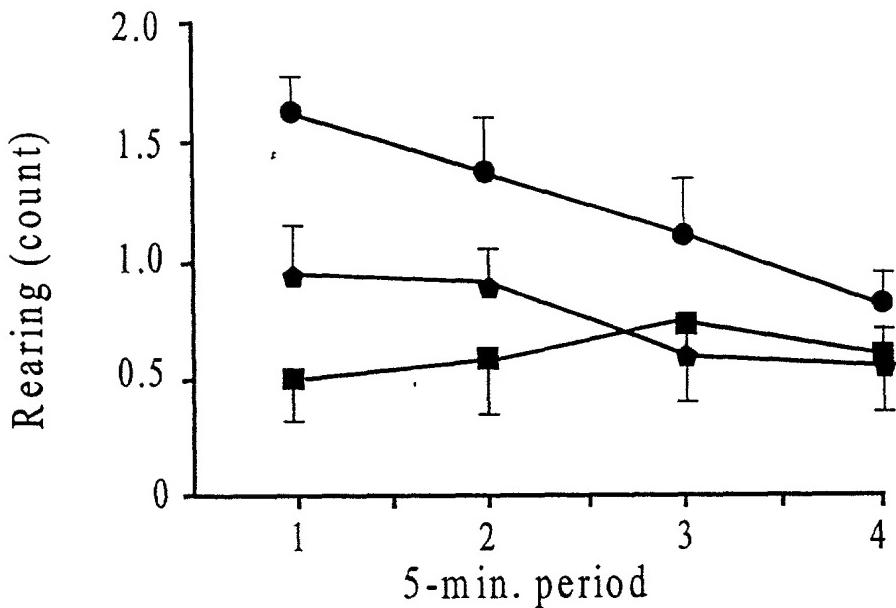


FIG. 37B

COPY

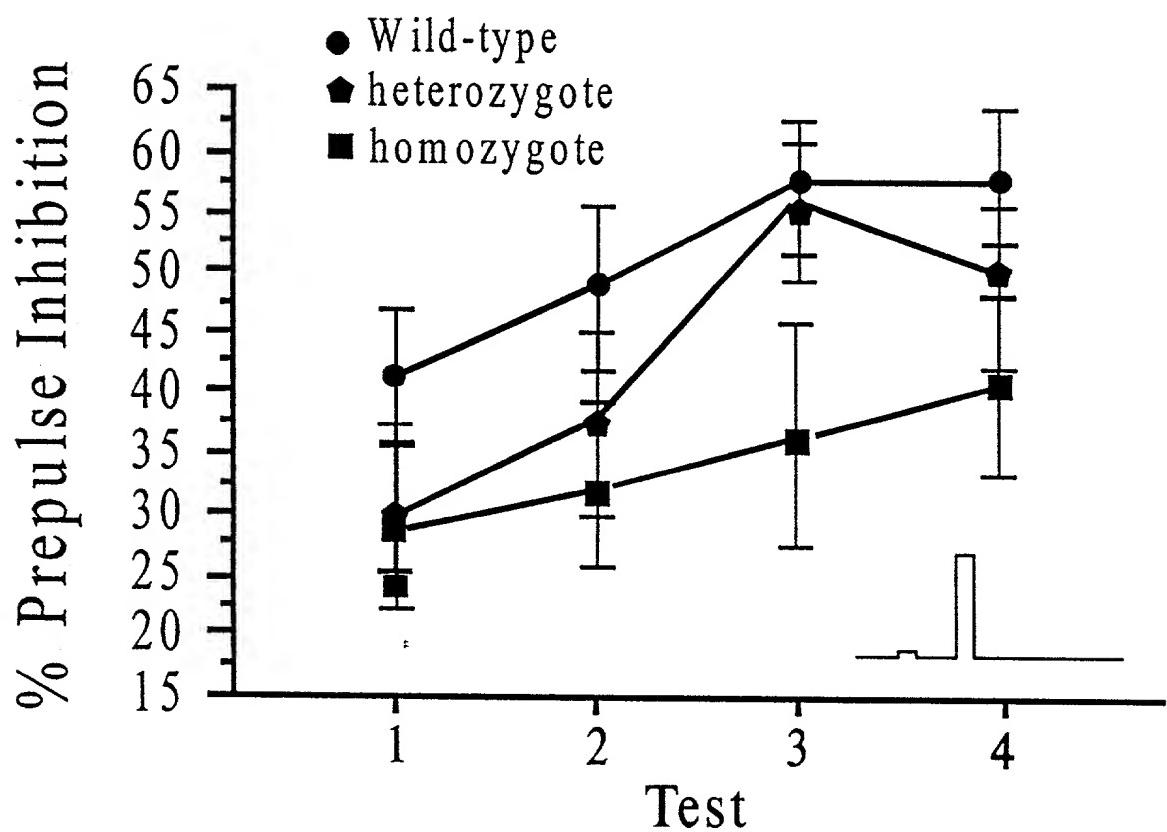


FIG. 38

Title: Purified and Isolated Potassium-Chloride Cotransporter
Nucleic Acids and Polypeptides and Therapeutic Compositions
and Methods Using Same
Applicant(s): Mount et al.
Serial No.: 09/835,976

COPY



FIG. 39A

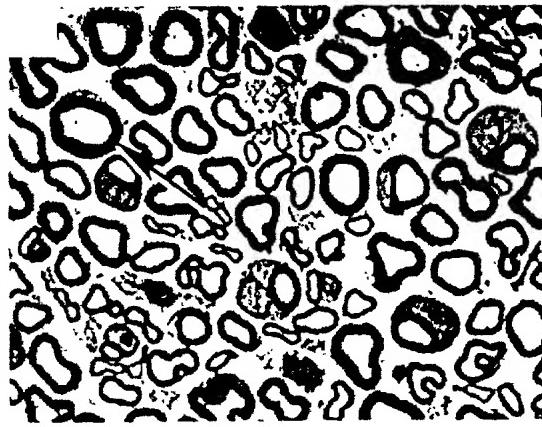


FIG. 39B



FIG. 39C



FIG. 39D

Title: Purified and Isolated Potassium-Chloride Cotransporter
Nu⁺ Acids and Polypeptides and Therapeutic and
Screening Methods Using Same
Applicant(s): Mount et al.
Serial No.: 09/835,976

COPY

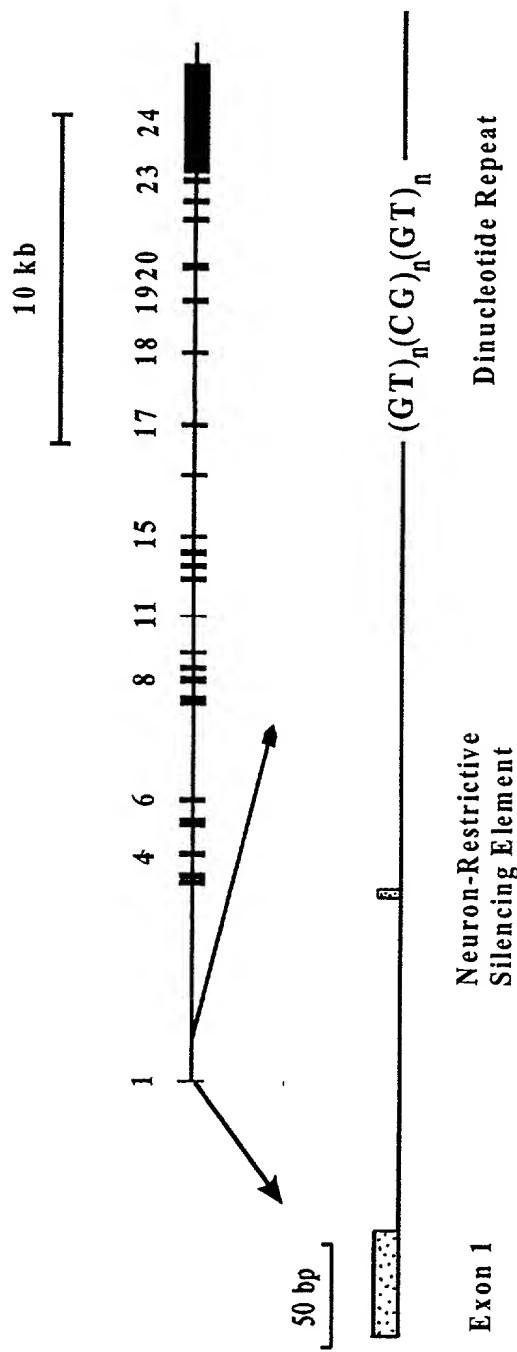


FIG. 40

Title: Purified and Isolated Potassium-Chloride Cotransporter
Nucleic Acids and Polypeptides and Therapeutic and
Screening Methods Using Same
Applicant(s): Mount et al.
Serial No.: 09/835,976

COPY

Sequence of the hKCC2 dinucleotide repeat in several individuals:

Sample 1:

Allele A (GT)₁₈ (GC)₇ (AT)₁ (GT)₄ (GC)₁ (GT)₁₁ / Total = 84

Allele B (GT)₁₆ (GC)₅ (AT)₁ (GT)₅ (GC)₁ (GT)₉ / Total = 74

Sample 2:

Allele A (GT)₁₈ (GC)₄ (AT)₂ (GT)₄ (GC)₂ (GT)₁₁ / Total = 82

Sample 3:

Allele A (GT)₁₆ (GC)₆ (AT)₁ (GT)₄ (GC)₁ (GT)₁₁ / Total = 78

Allele B (GT)₁₄ (GC)₅ (AT)₁ (GT)₄ (GC)₁ (GT)₁₁ / Total = 72

Sample 4:

Allele A (GT)₁₉ (GC)₆ (AT)₂ (GT)₄ (GC)₂ (GT)₁₀ / Total = 86

Allele B (GT)₁₇ (GC)₇ (AT)₂ (GT)₄ (GC)₂ (GT)₁₀ / Total = 84

Sample 5:

Allele A (GT)₁₇ (GC)₆ (AT)₂ (GT)₄ (GC)₁ (GT)₁₀ / Total = 80

Allele B (GT)₁₆ (GC)₆ (AT)₂ (GT)₃ (GC)₂ (GT)₁₀ / Total = 78

Sample 6:

Allele A (GT)₁₅ (GC)₆ (AT)₁ (GT)₄ (GC)₁ (GT)₁₁ / Total = 76

Allele B (GT)₁₆ (GC)₅ (GT)₁ (AT)₁ (GT)₄ (GC)₁ (GT)₁₁ / Total = 78

Sample 7:

Allele A (GT)₁₆ (GC)₄ (GT)₁ (AT)₁ (GT)₅ (GC)₁ (GT)₁₀ / Total = 76